

Western Sydney Parklands Eastern Creek Business Hub

February 2012

Prepared for **Western Sydney Parklands Trust**



State Significant Development
Request for Director General Requirements

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Date 17 February 2012
This document is for discussion
purposes only unless signed.

Appendices

Appendix A - ID Land Survey, prepared by *Whelans Insites*

Appendix B – Request for Director General Requirements criteria, NSW
Department of Planning and Infrastructure

Appendix C - Cost Estimates, prepared by *WT Partnership*

Appendix D - Ecology and Bushfire assessment and Targeted Survey,
prepared by *Ecological Australia*

Appendix E - Services assessment, prepared by *J.W Wyndham Prince*

Appendix F - Site Appraisal (Geotechnical and Contamination), prepared
by *Douglas Partners*

Appendix G - Preliminary Heritage Assessment, prepared by *Graham
Brooks and Associates*

Appendix H - Archaeological assessment, prepared by *Kayandel
Archaeological Services*

Appendix I - Traffic and Transport Assessment, prepared by *Traffix*

1 Introduction

1.1 Background

This report has been prepared on behalf of the Western Sydney Parklands Trust (WSPT). It is in respect to a forthcoming Staged Development Application (DA) for a Concept Proposal (Structure Layout and Building Envelopes) and Subdivision & Early Works to develop land located within the Rooty Hill precinct of the Western Sydney Parklands for retail, tourism and active open space uses. The development will be known as the 'Eastern Creek Business Hub'.

The report has been prepared to demonstrate that the proposed project satisfies the criteria under Schedule 2 Clause 5 of State Environmental Planning Policy (State and Regional Development) and to request Director General Requirements (DGR's). The proposed project Capital Investment Value (CIV) is greater than the \$10 million or more threshold under the SEPP for State Significant Development within the Western Sydney Parklands.

This report also provides a Preliminary Environmental Impact Assessment (PEIA) of the proposal in order to determine the key issues for the Director General Requirement ('DGRs').

Criteria published by the Department of Planning and Infrastructure for the preparation of the Request for DGR's have been applied to assist with the preparation of this document. A copy of these is provided at **Appendix B** for reference.

The report comprises six (7) sections, the remaining 6 of which are:

- The Site and its Context – *legal description, local and regional context, site features* ;
- Project Description – *description of proposal, Capital Investment Value, and purpose of the project*;
- Planning Context and Regulatory Framework – *Planning Policy and Legislation applicable to the Proposal*;
- Preliminary Environmental Impact Assessment – *broad outline of the likely environmental impacts of the proposal*;
- Key development issues – *following the preliminary environmental impact assessment above, identification of the key development issues to assist with the preparation of the DGRs*; and
- Conclusion.

1.2 Preparation of this Application

The project team comprises the following members:

Proponent	Western Sydney Parklands Trust
Consultant Project Managers	Cadence Australia
Urban Planner	Architectus
Urban Designer	Architectus
Landscape Architect	Urbis
Infrastructure & Services	J. Wyndham Prince
Ecology	Eco Logical Australia Pty Ltd
Heritage	Graham Brooks & Associates
Archaeology	Kayandel Archaeological Services
Drainage/Groundwater Flooding	J. Wyndham Prince
Geotechnical and Contamination	Douglas Partners
Traffic	Traffix
Quantity Surveyor	WT Partnership
Retail/Economic	Pitney Bowes
Surveyor	Whelans Insites
Communications	Kathy Jones and Associates

2 Site and context

2.1 Site area and legal description

The full site area affected by the application is 34 hectares and illustrated at Figure 1.

The legal identification of lots affected by this Request for Director General Requirements is listed below. Full Land ID Ownership Data is presented at **Appendix A**

ID	Lot/Sec/DP	Owner
6	3//DP1041487	Western Sydney Parklands Trust
7	100//DP882326	Western Sydney Parklands Trust
8	5/B/DP8681	Western Sydney Parklands Trust
9	4/B/DP8681	Western Sydney Parklands Trust
10	3/B/DP8681	Western Sydney Parklands Trust
11	1//DP135665	Western Sydney Parklands Trust
12	13/B/DP8681	Western Sydney Parklands Trust
13	1/B/DP8681	Western Sydney Parklands Trust
14	3//DP830836	Western Sydney Parklands Trust
15	2//DP830836	Western Sydney Parklands Trust
16	4//DP830836	Western Sydney Parklands Trust
17	1//DP830836	Western Sydney Parklands Trust
18	2//DP1041487	Western Sydney Parklands Trust
19	5//DP830836	Western Sydney Parklands Trust
20	6//DP830836	Western Sydney Parklands Trust
21	A//DP358346	Western Sydney Parklands Trust
22	8//DP31130	Western Sydney Parklands Trust
23	1//DP31130	Western Sydney Parklands Trust
25	3//DP31130	Minister Administrating the Environmental Planning and Assessment Act 1979
27	5//DP31130	Minister Administrating the Environmental Planning and Assessment Act 1979
28	6//DP31130	Western Sydney Parklands Trust
29	7//DP31130	Western Sydney Parklands Trust
30	2/A/DP8681	Western Sydney Parklands Trust
31	7//DP830836	Western Sydney Parklands Trust
32	8//DP830836	Western Sydney Parklands Trust
33	9//DP830836	Western Sydney Parklands Trust
34	10//DP830836	Western Sydney Parklands Trust
35	3/A/DP8681	Western Sydney Parklands Trust
36	12//DP882325	Western Sydney Parklands Trust
37	11//DP882325	Western Sydney Parklands Trust
38	14//DP882325	Western Sydney Parklands Trust
39	1//DP1069296	Western Sydney Parklands Trust
40	2//DP1069296	Western Sydney Parklands Trust
45	Road being the residue of land in Certificate of Title Volume 826 Folio 243	
46	Public Crown Subdivision Road	
47	Public Crown Reserve Road	
48	Road Being the Residue of Land in Certificate of Title Volume 147 Folio 41	
49	Public Crown Subdivision Road	

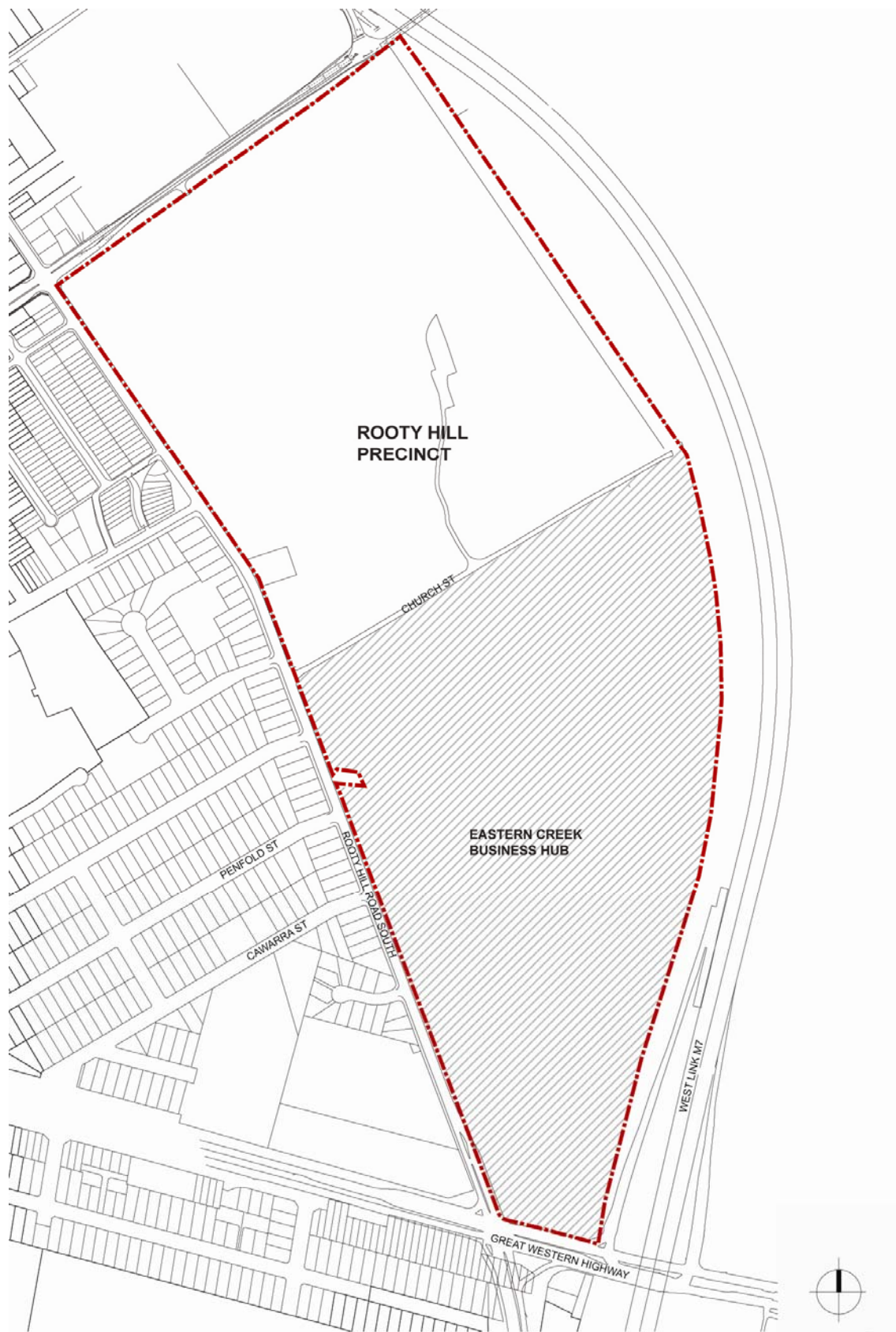


Figure 1 Area covered by this Request. The boundary of the Rooty Hill Precinct is shown as a red line. The hatched area is the land area subject of this application.

2.2 Location

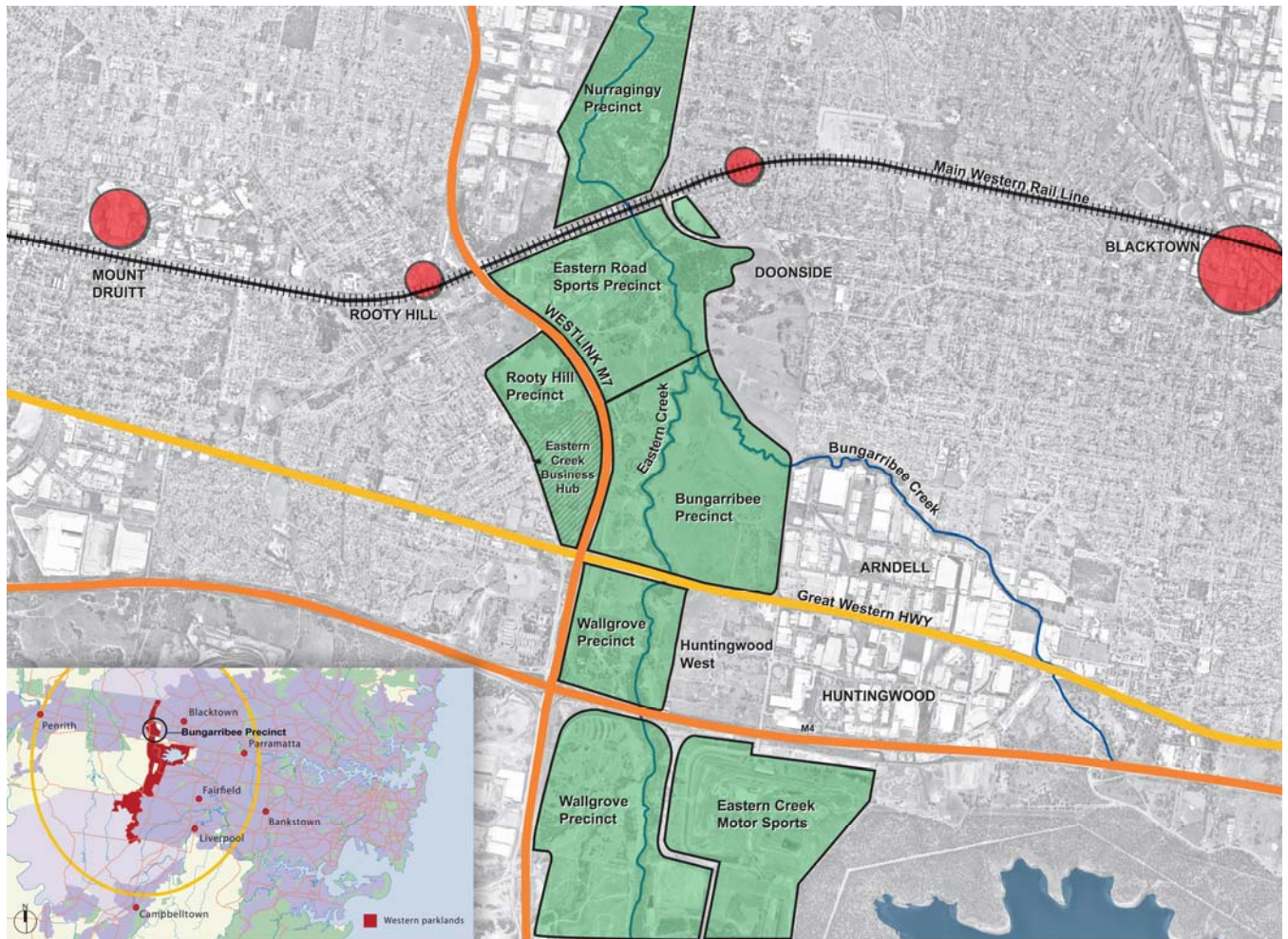
As illustrated by Figure 1, the site is located within the Western Sydney Parklands Rooty Hill Precinct. The site is framed by Rooty Hill Road South to the west, Church Street to the north and the M7 Motorway to the east. Further north is the Morreau Reserve. The site is located approximately 40 Kilometres from Central Sydney and located within the Suburb of Eastern Creek. The Local Government Area (LGA) is Blacktown.

Adjacent land use and activities include:

- Residential to the west, north-west and south. Building typology predominantly of residential detached dwellings;
- Non residential uses immediately to the west, including Eastern Creek Primary School and the Rural Fire Service;
- Pine Grove Memorial Park (Cemetery) to the south;
- Eastern Road Sports, Bungarribee and Wallgrove Precincts of the Parklands located to the north, east and south east respectively;
- Trunk receiving station associated with the Jemena Gas Networks, located just on the precinct's south east corner.

Some non residential uses are also located north west of the site, including a large Nursing Home (Our Lady of Consolation Nursing Home), a secondary school (St Agnes High School) and small scale retail on the corner Evans Road and Rooty Hill Road South.

Figures 2 to 6 below provided an illustrated overview of the site in its regional and local context.



LEGEND

-  Major roads - motorway
-  Arterial Road
-  Railway
-  Watercourse

Figure 2 Regional Context - position. The site is located immediately west of the M7. Relationship of the site to key features within the Blacktown region is illustrated. Mount Druitt and Rooty Hill Town Centres are to the north.

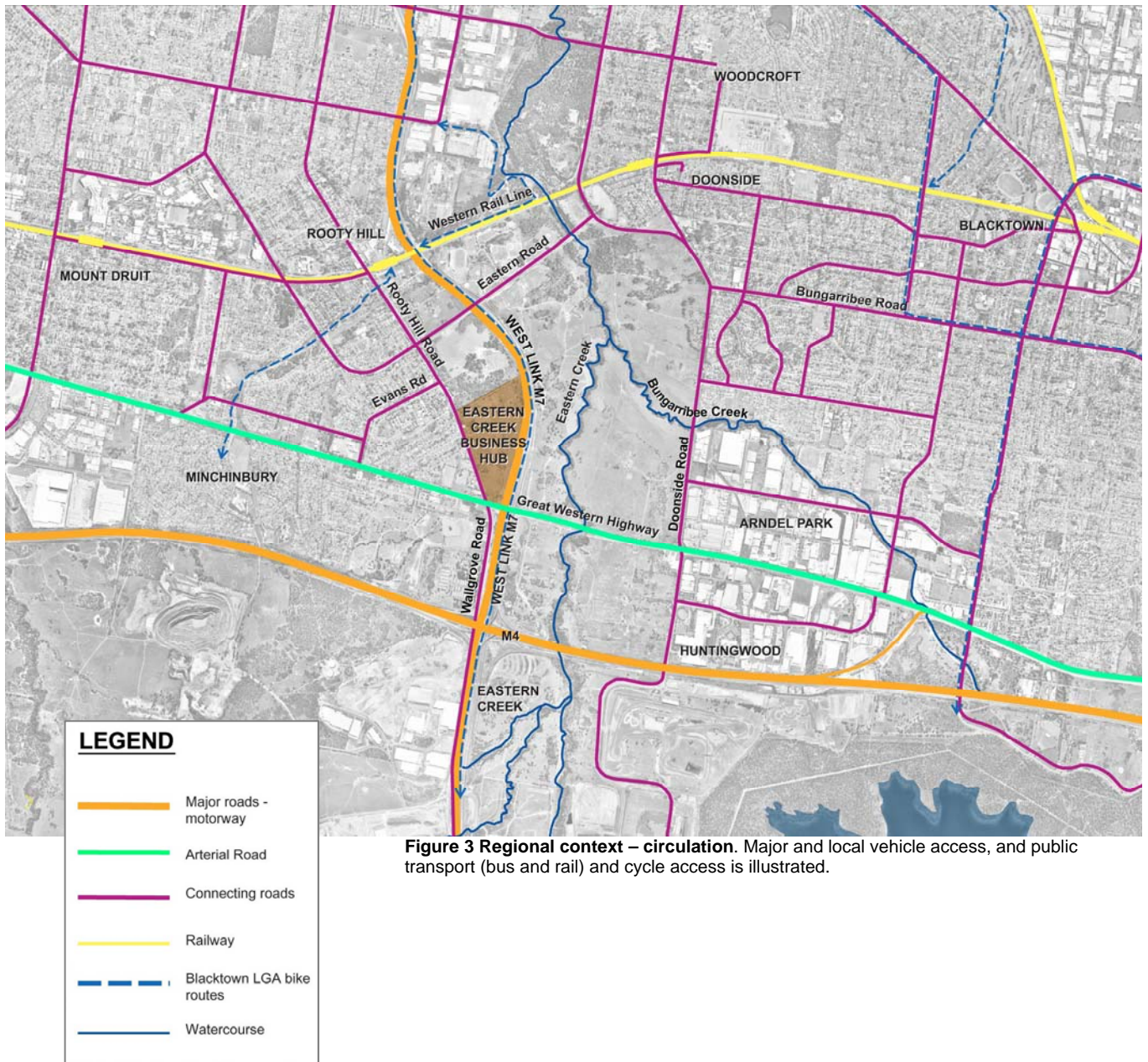


Figure 3 Regional context – circulation. Major and local vehicle access, and public transport (bus and rail) and cycle access is illustrated.

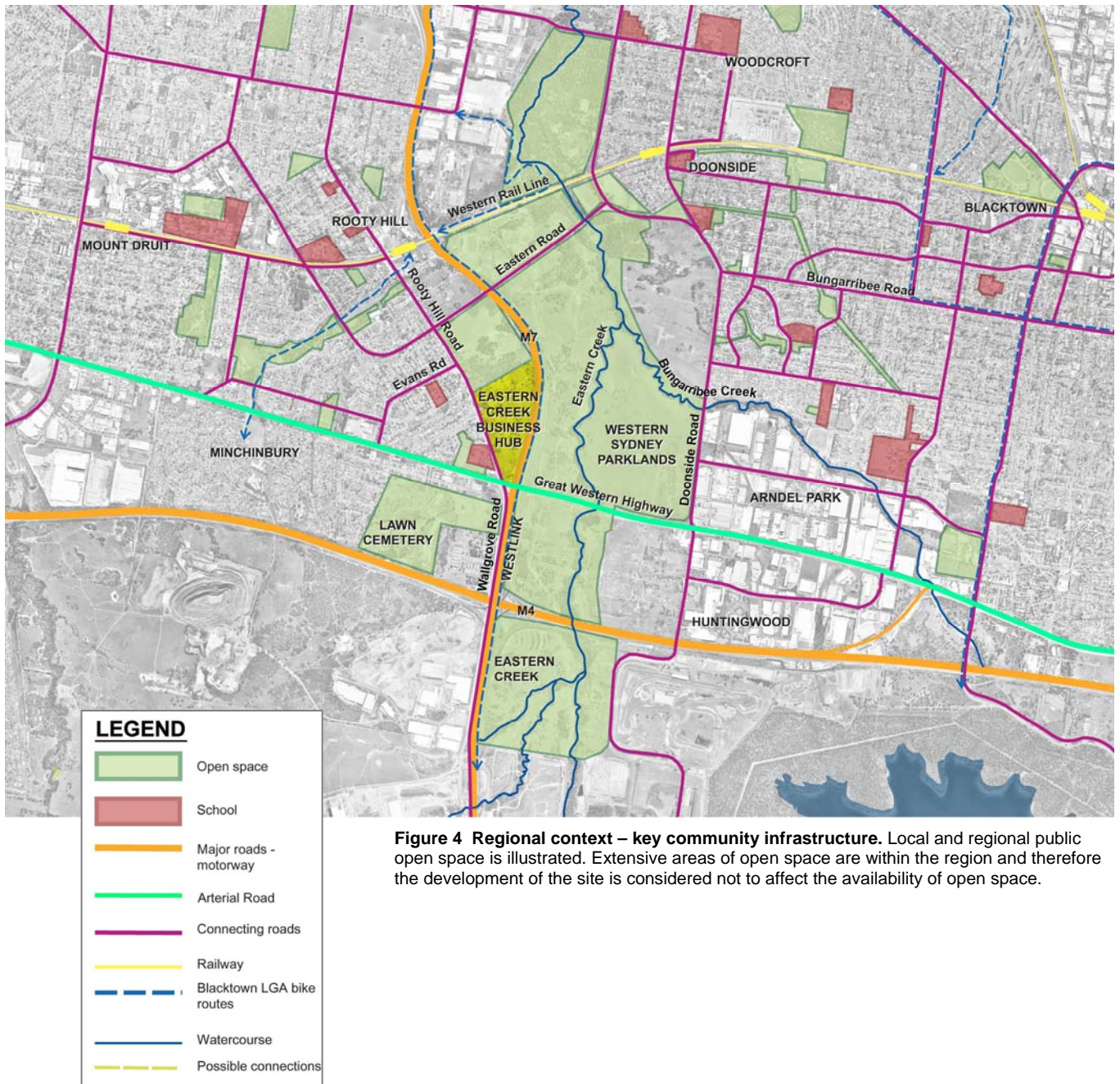


Figure 4 Regional context – key community infrastructure. Local and regional public open space is illustrated. Extensive areas of open space are within the region and therefore the development of the site is considered not to affect the availability of open space.

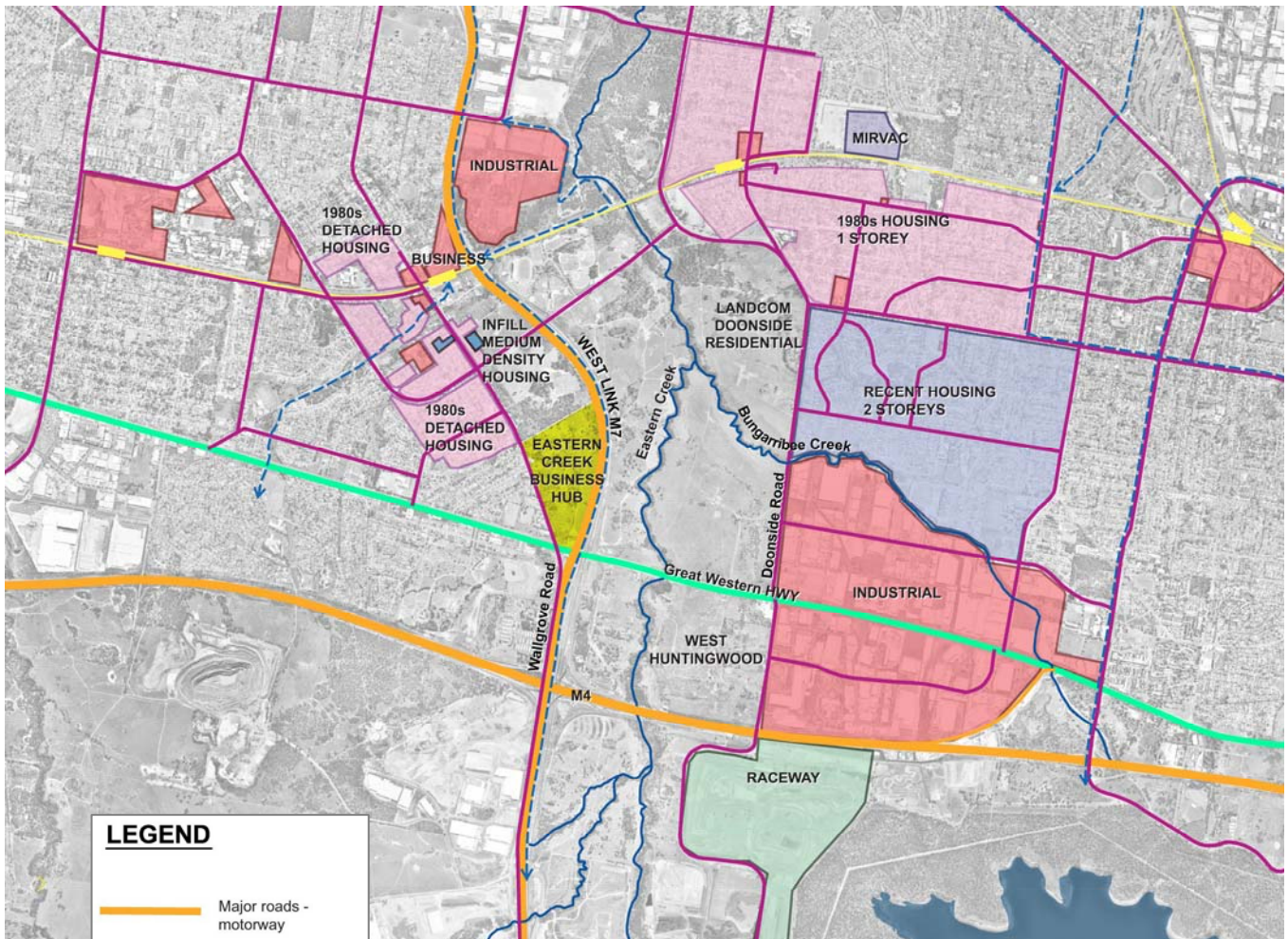


Figure 5 Regional context – built form and land use activity.

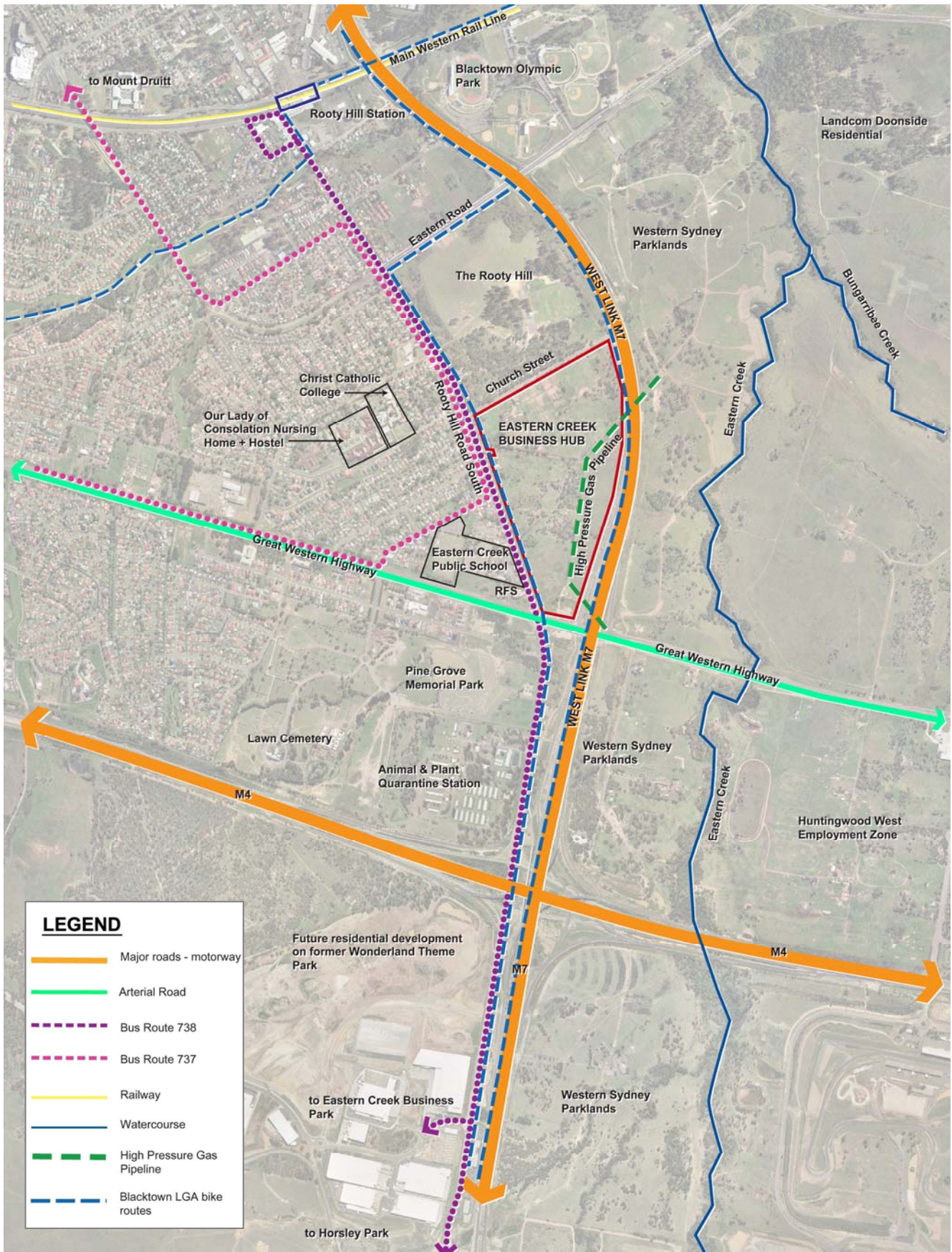


Figure 6 Local context. Adjoining and nearby non-residential land use activity is noted.

2.3 The site

2.3.1 Previous and current land use activities

Observation of aerial photography in possession of the DP notes that in the 1970's the site north of Beggs Road appears to have been used for market gardens and possibly poultry farming. Other rural uses and residential dwellings also occupied the site.

In the 1998 aerial photograph market gardening has ceased, replaced by horse paddocks and stables. The majority of residential dwellings have been removed, with residential uses limited to Rooty Hill Road South and Church Street. These dwellings are of weatherboard, brick or fibro construction.

Presently, the site appears still to be used for horse grazing, with a number of paddocks and associated structures. Residential dwelling houses located at the corner of Church Road and Rooty Hill Road South still remain.

South of Beggs Road, the site is open grasslands with scattered and clustered trees. Further south west of this area, there are numerous stockpiles of soil and rubble (many of which covered in grass).

A high pressure gas pipeline is located toward the site's eastern boundary with the M7, associated with the Jemena Gas Trunk Receiving Station.

2.3.2 Topography and drainage

Topographical relief across the site is limited, with a very slight grade/slope downwards toward the east.

A drainage channel is located across the site connecting the culvert near Rooty Hill Road South to the culvert under the M7 (referred to further in this report as the east west drainage channel).

Stormwater and drainage issues are discussed further below.

2.3.3 Soils and Geology

The 1:100,000 Soil Landscape Map of Penrith indicates that the site includes two landscape types:

- Blacktown Soil Landscape: located over the western section of the site. Soil type is typically of low fertility, moderately reactive and generally of low wet bearing; and
- South Creek Soil Landscape: located over the eastern section of the site. Soil type typically of low fertility, moderate reactivity and are subject to water logging.

The Penrith 1:100,000 Geological Series Sheet indicates that the site is underlain by Bringelly Shale of the Wianamatta Group of the Triassic age. This formation comprises shale, carbonaceous claystone, sandstone laminite and some minor coal bands. The rock units typically weather to form clays of medium and high plasticity. The bedrock is mantled by Quaternary alluvium within valley floors of the Eastern Creek and Bungarabee Creek System.

The *Map Salinity Potential in Western Sydney* (2002) prepared by DIPNR (now Department of Planning) identifies moderate salinity potential. It is

noted that the DIPNR map is based on soil types, surface levels and general groundwater considerations but are not in general ground-truthed.

2.3.4 Traffic and Transport

The arterial road network in the locality of the site includes the M7 and the Great Western Highway. The M7 forms the eastern boundary of the site, with access available from the Great Western Highway. The Great Western Highway forms the southern boundary to the site, and provides north facing access ramps to the M7. South access connections to the M7 are available via Wallgrove Road.

The M7 forms an interchange with the M4, further south of the site. Both the M7 and Great Western Highway provide a high degree of regional accessibility to the site.

Rooty Hill Road South, classified a Main Road (MR537) forms the site's principal street frontage (some 770 metres in length). A four lane undivided road, the road connects with Great Western Highway and provides direct access to residential streets to the west opposite the site including Cable Place, Cawarra Street, Penfold Street and Minchinbury Street. Rooty Hill Road South also provides direct north/south connection between Eastern Creek and Rooty Hill Station, with signalled controlled intersections with Eastern Road and Francis Road in between. Francis Road is a Main Road (MR337) and Eastern Road is a Regional Road (RR7170).

The M7 has reduced traffic volumes significantly along Rooty Hill Road South, some 26% since its operation, releasing midblock capacity. Pre M7, Rooty Hill Road South had around 20,352 vehicles per day (2002). Post M7, this had reduced to around 15,063 vehicles per day. Such reduction will assist with site accessibility, discussed further in this report.

Church Street and Beggs Road are local roads that also service the site. Church Street also provides access to the Morreau Reserve, located just north of the site. Beggs Road is only formed for a short section, approximately 30 metres from Rooty Hill Road South. The remainder of the road is unformed as it travels eastwards. Belmore Road and Telegraph Road are also unformed roads located within the precinct.

Eastern Creek Public School is opposite the site. A survey of parent/carer set-down and pick-up activity has been undertaken between AM and PM peak periods (on the 13th November 2009). The survey has identified that no school related vehicular activity appears to occur along the Rooty Hill Road frontage, with all school pick-up and set-down activity occurring within the school car park via Cawarra Road, well located away from the site frontage.

The M7 Cycleway is located just east to the site, with direct access at its north/east point.

Busways operates bus services to Mount Druitt to Eastern Creek (Route 737) and Mount Druitt to Eastern Creek Business Park (Route 738), via Rooty Hill Station, with bus stops located just outside the site on Rooty Hill Road.

2.3.5 Utilities and Services

Sewer

Sewer Pumping Station (SP 0395) is adjacent to the site. Residential development west of Rooty Hill Road South drains to this pumping station. The station then drains into a 300mm gravity main to the north of the site. It is understood that this system is operating at capacity.

A 900mm sewer is located to the east of the M7 Motorway. This sewer is understood to have spare capacity.

Water

300mm potable water mains are located adjacent to the site. The mains are understood to have spare capacity.

Gas

A 50mm gas main is located along Rooty Hill Road south, and is understood to have spare capacity.

Power and Telecoms

Low voltage power is located on Rooty Hill Road South, and provides power to adjacent residential lands. High voltage lines exist overhead on the west side of Rooty Hill Road South. Current reticulation system is at operating capacity, and there is limited scope for expansion. New infrastructure will be required, as discussed further in the PEIA.

Overhead telecommunication cables serve adjacent urban areas.

Stormwater

The stormwater system is limited and drainage difficulties exist.

The site drains to the east via two box culverts under the M7. The northern culvert drains the northern part of the site. The catchment of this culvert appears to include the residential areas of Rooty Hill further to the north and west. There is no physical infrastructure that assists with facilitating drainage and water flows overland to the culvert. A lack of topographic fall also means that the downstream side is no lower than the upstream side. As a result of the limited infrastructure, large expanses of water sit in the vicinity of the culvert, affecting the environmental condition. Algal blooms are common.

The southern culvert drains the south portion of the site. It's catchment includes a portion of the residential area to the west of Rooty Hill Road South. This residential area drains under Rooty Hill Road South via a culvert, which is then intended to be connected to the culvert under the M7 by a formed drainage channel (east/west drainage channel). The channel however does not drain under the Jemena high pressure gas main. It is in poor condition and overgrown in sections restricting the flow of water under the pipeline. The upstream culvert is submerged and water does not appear to flow at all from this point.

Inlet pits on Rooty Hill Road South and Cable Place are also in poor condition, with large amounts of silt and rubbish blocking flow. Surrounding road ways are flat, to the extent that water will stand within the road gutters after rain, and does not drain.

2.3.6 Heritage and Archaeology

Heritage

The site does not contain any heritage listed items. However, it is in the vicinity of items including:

- *The Rooty Hill*: Located to the north of the site, and within the Rooty Hill Precinct. Listed on the State Heritage Register as an item of State Significance.
- *Pioneer Memorial Church*: Located on Rooty Hill Road South, listed as item of local heritage significance in Schedule 2 of the Blacktown LEP 1988.
- *Belvedere*: Located on Rooty Hill Road South, listed as an item local heritage significance in Schedule 2 of the Blacktown LEP 1998.

Archaeology

Preliminary site inspection and review of documents previously undertaken for the WSPT suggests no recorded Aboriginal Sites on the site. However 348 Aboriginal sites are known within 5km, 105 of which occur within 3km. Accordingly, there are potential for archaeological deposits, namely in areas where there has been minimum previous land disturbance. Further investigations are required to confirm the 'true' archaeological potential. This is discussed further under the Preliminary Environmental Impact Assessment.

2.3.7 Vegetation and threatened species

The majority of the site has been cleared, with around 75% of the land being modified grassland dominated by exotic species.

The remaining 25% comprises Shale Plains Woodlands. These woodlands are a sub community of the Cumberland Plain Woodland in the Sydney Basin Bioregion, a critically endangered ecological community under the NSW *Threatened Species and Conservation Act 1995 (TSC Act)*; and a sub community of the Cumberland Plain Shale Woodlands and Shale-Gravel Transition Forest, a critically endangered ecological community under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)*.

Whilst there is a threatened ecological community present on the site, no threatened flora or fauna species have been observed. There is the potential habitat within the study area for a range of threatened birds, bats, the Cumberland Plain Land Snail (*Meridolum corneovirens*) and the Green and Golden Bell Frog (*Litoria aurea*). A migratory bird species, Latham's Snipe (*Gallinago hardwickii*) was observed foraging within the study area, during the field surveys. Assessment of significant impact on these species would be completed as part of the preparation of the Environmental Impact Statement.

With respect to noxious weeds, 8 species exist on the site.

2.3.8 Bushfire

Bushfire hazard across the site is considered low, based on the gentle slope of the land and the low level of vegetation/plantings.

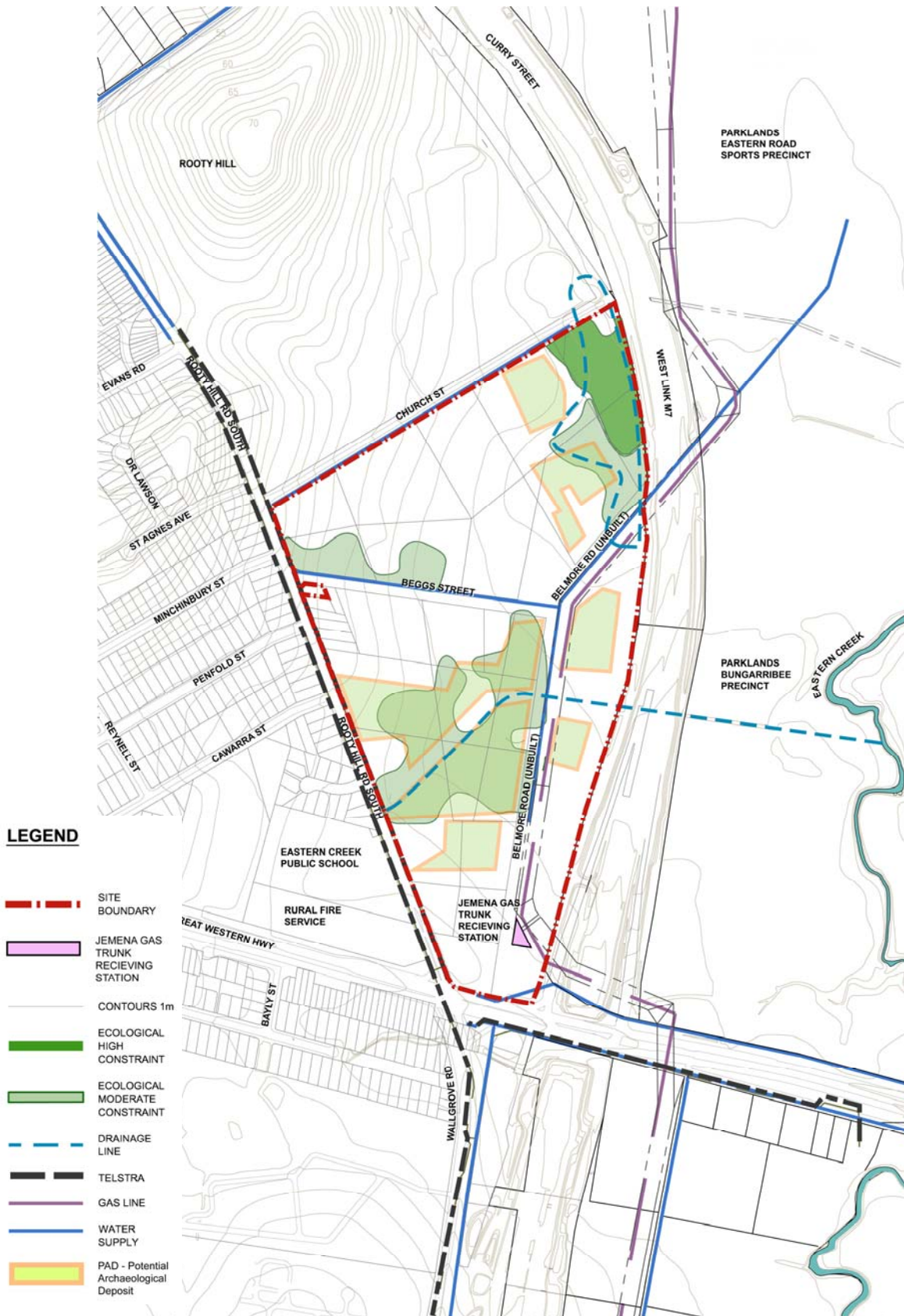


Figure 7 Site analysis. Key site features are illustrated.

3 Development description

Following receipt of DGR's, a Staged Development Application (DA) will be made under Part 4 Division 4.1 of the EP & A Act for:

- A Concept Proposal providing a development structure for proposed Eastern Creek Business Hub including site layout, activities, building envelopes, design guidelines; and;
- First Stage approval for Super Lot Subdivision and Early Works to accommodate future development.

3.1 Concept Proposal

The key components of the forthcoming Concept Proposal are summarised below:

3.1.1 Land use elements

The Concept Proposal will accommodate future development that simultaneously meets an identified need in the area, whilst providing compatible scale and form to adjoining uses.

The primary land use elements of the Eastern Creek Business Hub within the Concept Proposal will be:

- *Convenience retail* which may accommodate a supermarket and speciality shops to service the immediate local community with a floor space provision of approximately 9,500sqm for this activity; and
- *Bulky goods/large format retail* which may accommodate warehouse style retail such as garden centre, home goods, hardware outlets and with a floor space provision of approximately 30,000sqm for this activity;

These above uses will comprise only 10.93 hectares of land within the total 34 hectares of the precinct.

Complementary parkland land use elements will include:

- *Recreation*, such as an All Activities Playground for the use by the local community, with a floor space provision of approximately 5,000sqm for this activity;
- *Tourism* such as a motel, to take advantage of the proximity of major sporting facilities such as the Blacktown International Sports Park, the AFL facility and the Western Sydney Parklands, with a floor space provision of 8,000sqm for this activity, and
- *Open Space* including areas for environmental, restoration, protection and stormwater management.

Other land uses elements associated with the current and future operation of the site will also be maintained/provided including the gas main, a proposed buffer to the gas main and extension of vehicle access through the site to Church Street.

A Preliminary Structure Plan provides a distribution of these below at Figure 8.

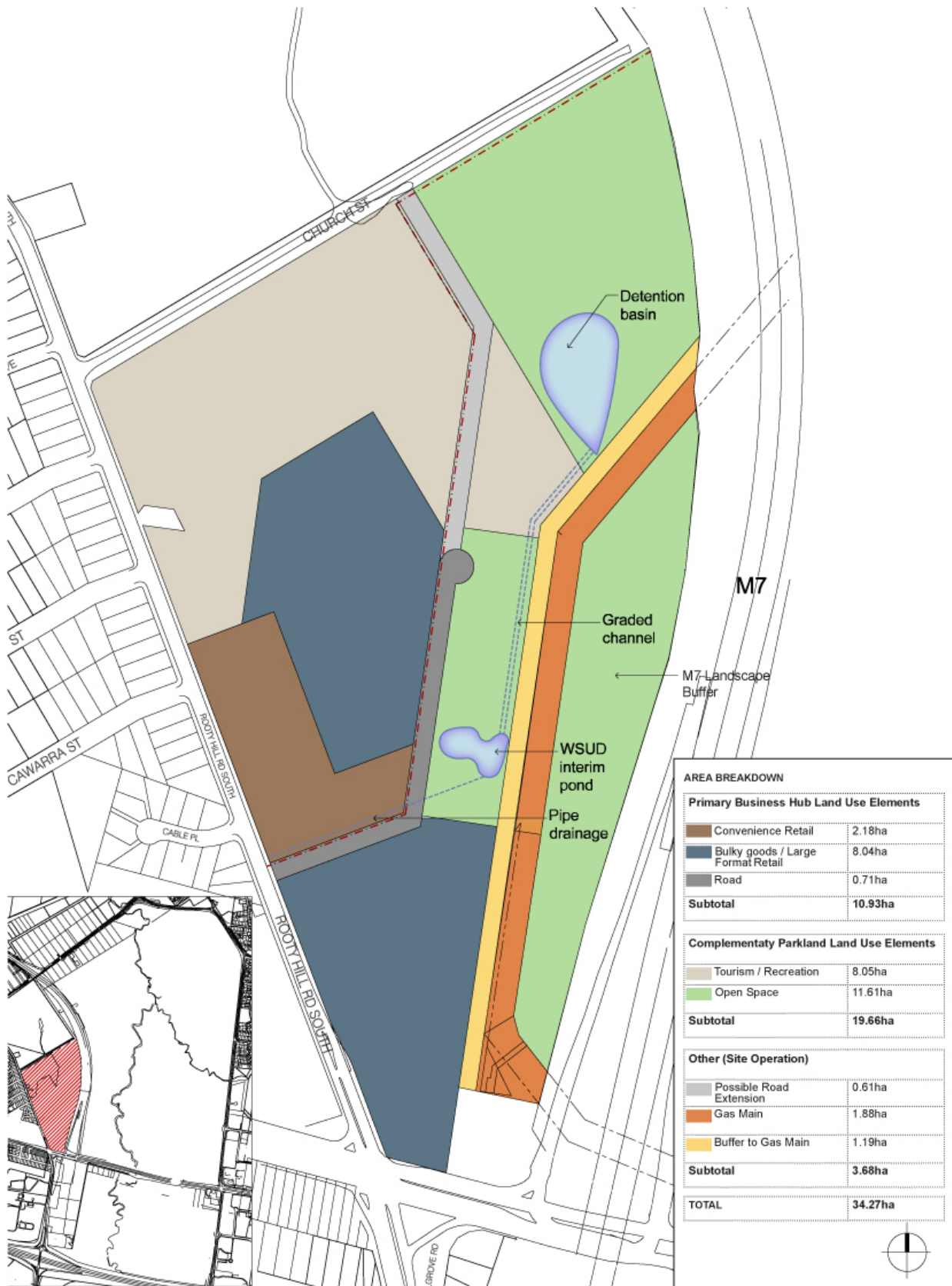


Figure 8 Preliminary Structure Plan. Proposed land use and activity structure for the proposed Eastern Creek Business Hub is illustrated. As noted by the area table, Business Hub land uses will comprise only 10.93 hectares within the total 34 hectare site.

3.1.2 Design Principles

The Design Principles for the Concept Proposal are intended to shape subsequent stages of development. It is envisaged that these design principles will inform the preparation of Design Guidelines, which is discussed further in this report.

- Provide a frontage to Rooty Hill Road South that is active and complementary in scale to the existing built form along the western side of Rooty Hill Road South.
- Locate larger scale built form away from the Rooty Hill Road South frontage.
- Provide a clear street hierarchy, which link to existing road networks.
- Locate principal site access at Rooty Hill Road South, and secondary site access at Church Street.
- Locate new development along new and existing road frontages to ensure active frontages and a street address.
- Provide a high quality public domain which offers a good degree of amenity, including footpaths and street trees, landscaping and a central meeting place, such as a market square.
- Incorporate high quality architecture and landscape design.
- Incorporate environmentally sustainable design principles.
- Incorporate Crime Prevention Through Environmental Design principles.
- Provide on grade car parking, however not along primary street frontages. Located either behind or the side of buildings behind the building line to manage visual impact.
- Conserve and enhance existing remnant vegetation with appropriate buffers, setbacks and asset protection zones.
- Connect with existing bicycle and pedestrian networks to promote connectivity and permeability.
- Incorporate Water Sensitive Urban Design principles to manage stormwater.
- Provide a landscape buffer to the Gas Works main and M7.

3.1.3 Built form and landscape character envisage by the Concept Proposal

The Eastern Creek Business Hub will be characterised by quality built form located within a landscape setting that integrates with the landscape character of the broader Western Sydney Parklands.

Streetscapes will present a strong landscape character, with street trees and generous setbacks to augment verge landscaping. The public domain will provide both amenity and a quality address for businesses.

Buildings will present active and well designed street frontages and generous landscape setbacks that integrate with the landscape character of streets.

The following images provide an indication of the character of future development under the Staged DA. Of particular relevance is the interface between the built form and landscape, and the quality of the architecture, rather than height and scale of buildings. The scale of height of buildings will need to be further developed as part of the development of the proposal.



Figure 9 Landscaped setbacks

Street frontages are to be characterised by landscaped setbacks that create attractive public domain and good pedestrian amenity.



Figure 10 Street frontages

Retail along Rooty Hill Road South is to complement the scale of existing development across the road.



Figure 11 Market Square

A market square is to be located at the entry to the development to provide attractive public domain and a distinctive address to the development.



Figure 12 Active frontages

Retail development is to demonstrate contemporary high quality built form with active frontages



Figure 13 Pedestrian amenity

Open space is to be provided within the development that incorporates elements that improve pedestrian amenity and enable passive and active recreation.



Figure 14 Street trees

Streetscapes are to incorporate street trees and active frontages



Figure 15 Distinctive built form

Large format retail uses are to incorporate well designed buildings that address the street and incorporate landscaping in the front setback with car parking located away from the street frontage.



Figure 16 Well designed large format retail

Bulkier buildings are to be located within the development behind lower scale development along Rooty Hill Road South and are to be well designed architecturally with lower environmental impact than standard large format retail warehouses.



Figure 17 All abilities playground

An all abilities playground type facility is to be provided that is a resource for the local community and which complements and connects into the facilities of the Western Sydney Parklands

Indicative character images of future development

3.2 First Stage Subdivision and Early Works

First Stage approval for Subdivision will be sought for the creation of super lots, providing land parcels to facilitate future development.

Early Works approval will also be sought and include associated land works, roads and infrastructure and services required to establish future development.

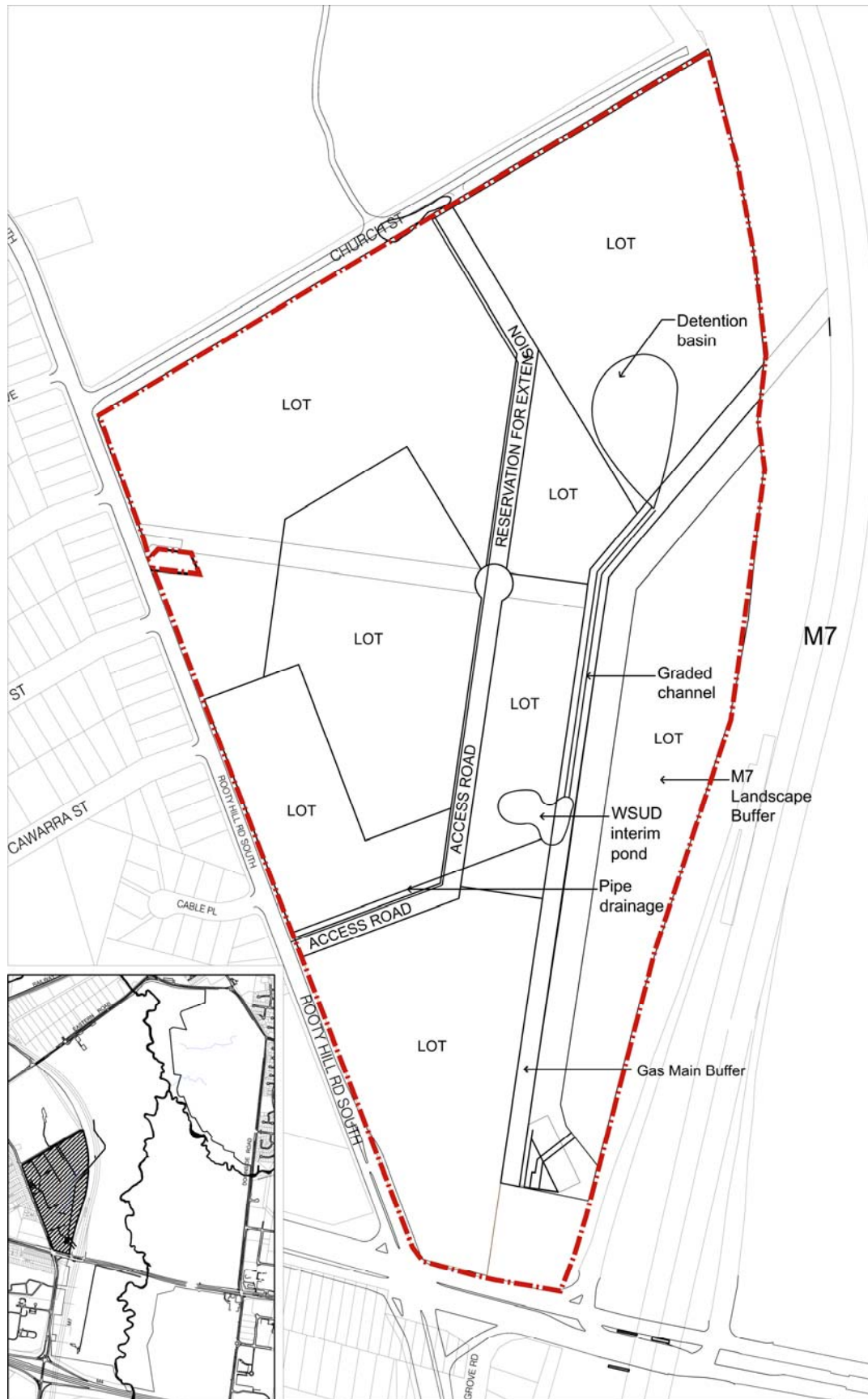


Figure 18 Preliminary Subdivision Plan. First Subdivision and Early works will establish super lots to facilitate future development under the Concept Plan.

3.3 Indicative development outcome

The following plans illustrate a possible development outcome under the Staged DA. The plans provide an indicative distribution of buildings, activities and landscape outcomes in accordance with the preliminary Structure Plan and Design Principles discussed above.

An indicative development footprint with large format retail/bulky good retail located to Rooty Hill South and Great Western Highway is also shown as an alternative layout for this southern area of the site under the preliminary Structure Plan.

It is noted that the total area of development footprint possible under the Staged Development Application would comprise approximately 30% of the application area.



Figure 19 Indicative development footprint. A plan outline of building and activities possible under the future DA is illustrated.



Figure 20 Illustrative plan. High quality landscaping, and well designed and appropriately located buildings design requirements will provide for a Business Hub of quality and amenity.

3.4 Estimated Capital Investment Value

The Capital Investment Value (CIV) of the Staged DA is estimated to be around \$129 Million. Proposed Subdivision and Early Works component is estimated to be around \$12 Million.

Cost estimates are provided at **Appendix C**, prepared by WT Partnership Quantity Surveyors.

The CIV is well over the \$10 Million threshold to be declared State Significant Development, as identified by State Environmental Planning Policy (State and Regional Development) 2011.

3.5 Justification of the Development

The Staged DA will facilitate the structure and future development of the site for commercial related uses, likely under a Crown 50 year lease. Commercial related uses (retail, tourism) are permitted with consent, and discussed further in this request.

As noted earlier, the full site area comprises 34 hectares within the total Western Sydney Parklands area (being 5,280 hectares, which the Trust holds 2,700 hectares) and will contain around only 10.93 hectares of primary business hub activity (convenience retail and bulky goods/large format retail). Although small in area, these activities are required to generate an income for the Western Sydney Parklands Trust and assist with overall revenue to support the development of the wider urban parkland. This is consistent with the Trust's business objectives within the Western Sydney Parklands Plan of Management, discussed further under Part 5 of this report. The site location is preferred, due to being separated by the main parkland spine by the M7 Motorway and direct access to main vehicle routes. Alternative sites were considered within the Bungarribee and Wallgrove Precincts, however not entirely desirable in urban design terms as these would be located more within the main north south parkland corridor including closer to the Eastern Creek waterway and Bungarribee homestead.

The Parklands is fast becoming popular with the local and regional community. The Trust has been finalising a landscape vision for the adjacent Eastern Road and Bungarribee Precincts. This Development will support the ongoing establishment of the urban parkland in accordance with the landscape vision.

An illustrative landscape plan of the development of site, in context with the vision for the adjacent Bungarribee precinct, is provided below.

Development consent will not be sought under the forthcoming DA for the landscape works outside the site. It is illustrated only by this request to demonstrate the contextual relationship between the proposed development of Eastern Creek Business Hub and the landscape establishment of the urban parkland.



Figure 21 Bungarribee and Eastern Road Precincts Landscape vision. The relationship between the site and the adjacent Bungarribee and Eastern Road Precincts is illustrated. The proposed Eastern Creek Business Hub will generate an income for the Trust, assisting with general revenue and the broader establishment and management of the Parklands.

4 Planning context and regulatory framework

4.1 Metropolitan Planning

4.1.1 Sydney Metropolitan Strategy

The Sydney Metropolitan Strategy, *Metropolitan Plan for Sydney 2036*, is aimed at guiding growth and change in the Sydney Greater Metropolitan Region over the next 25 years. The creation of the Western Sydney Parklands was envisaged under the previous Metropolitan Plan for Sydney, prepared in 2005. The current Metropolitan Plan for Sydney maintains identification of the Western Sydney Parklands as a major urban park within the Western Sydney region.

Action H2.2 specifically relates to the Western Sydney Parklands. Action H2.2 aims to:

'Develop Western Sydney Parklands as a major asset for Western Sydney.'

The Metropolitan strategy envisages achieve this action through developing park tourism and commercial uses. The proposed use of this Precinct supports achieving Action H2.2 under the Sydney Metropolitan Plan.

4.1.2 Draft North West Subregional Strategy

The Draft North West Subregional Strategy specifically aims at developing new facilities in the northern precincts of the Western Sydney Parklands. This strategy also identifies the role of the Parklands as a key habitat corridor, to be established through bush regeneration and revegetation.

The Strategy sets out the five Western Sydney Parkland precincts situated within the North West Subregion. The subject site is located within the Bungarribee/Rooty Hill Precinct. This area is to become the main community recreation hub for both active and passive recreation in the northern part of the parklands. Bushland is to be restored through the floodplain area and the rural landscapes will be retained on the valley slopes to allow open areas for intensive community use such as active sporting fields.

Commercial facilities within the Parklands, as envisaged by Action H2.2 of the Metropolitan Plan for Sydney, will support the achievement of the above. It will provide the opportunity to support revenue generation for reinvestment into the ongoing establishment of the wider Parklands as a habitat corridor and active and passive community recreation.

4.2 Legislation

The following legislation is applicable to the site:

- Commonwealth Environmental Protection and Biodiversity Conservation Act 1999 (EPBC Act)
- NSW Environmental Planning and Assessment Act 1979 (EP&A Act)
- NSW Threatened Species Conservation Act 1995 (TSC Act);
- NSW Water Management Act 2000
- NSW Noxious Weeds Act 1993

- NSW Rural Fires Act 1979
- NSW Protection of the Environment Operations Act 1997
- NSW Western Sydney Parklands Act 2006 (WSP Act).

4.2.1 Environmental Protection and Biodiversity Conservation Act 1999 (EPBC Act)

The Commonwealth *Environmental Protection and Biodiversity Conservation Act 1999 (EPBC Act)* establishes a process of assessing the environmental impact of development where the site includes 'matters of national environmental significance'. Under the EPBC Act, any activity or development that has, will have, or is likely to have a significant impact on a matter of national environmental significance is considered a 'controlled action' and requires approval from the Commonwealth Department of Sustainability, Environment, Water, Population and Communities (SEWPAC).

Following referral of the proposed development, the SEWPAC will either classify the development or activity as a 'non-controlled action' or a 'controlled action'. If the SEWPAC determines a development or activity is a 'non-controlled action', no further approval from the SEWPAC is necessary. SEWPAC may issue a 'non-controlled action – particular manner', which imposes conditions that further approval is not required, if development is undertaken in accordance with the particular approval. If the SEWPAC determines the activity or development is a 'controlled action', the project will require an assessment and approval before it can proceed. There is a bilateral agreement in place with NSW which coordinates Director General and EPBC environmental assessment requirements and if approved, conditions of consent.

Shale Plains Woodland (SPW) is located on the site, a sub community of Cumberland Plain Woodland in the Sydney Bioregion (CPW), which is listed as a critically endangered ecological community under the EPBC Act.

4.2.2 NSW Environmental Planning and Assessment Act 1979 (EP&A Act)

The EP&A Act is the principle planning legislation for NSW. The EP&A Act provides the framework for environmental planning and assessment of development and proposals.

Part 4 Division 4.1 of the EP&A Act applies to development that is identified as State Significant Development. As noted earlier, and discussed further by this application, the proposal is identified by the State Environmental Planning Policy (State and Regional Development) as such development.

Other applicable SEPP's are also discussed further below under Section 4.3.

4.2.3 Threatened Species Conservation Act 1995

The *Threatened Species Conservation Act 1995 (TSC Act)* aims to protect and encourage the recovery of threatened species, populations, communities and their habitats listed under the Act. The *TSC Act* is to be taken into consideration if a development or activity is likely to significantly affect threatened species, populations, communities and their habitats.

CPW is listed as a critically endangered ecological community under the TSC Act. In the administration of Section 79C of the EP and A Act, the consent authority must determine whether there is likely to be a significant effect on threatened species, populations or ecological communities or their habitats (7 part test).

4.2.4 Water Management Act 2000

The *Water Management Act 2000 (WM Act)* controls the extraction and use of water, the construction of works such as dams and weirs and the carrying out of activities in or near water sources in NSW, in particular it carries forward the permitting of works within 40m of a watercourse.

A drainage line occurs on site conveying stormwater from the urbanised catchment through the site to a culvert that passes under the M7. At this preliminary stage it appears this drainage line has been previously constructed and could be supporting regrowth.

Approval is typically required under Section 91E(1) of the WM Act if a controlled activity is proposed within 40m of waterfront land. However public authorities such as the WSPT are exempt from this approval requirement under Section 38 of the *Water Management (General) Regulation 2011*.

Water sensitive urban design principles to ensure downstream water quality remain relevant planning considerations.

4.2.5 Noxious Weed Act 1993

The Noxious Weeds Act 1993 seeks to identify noxious weeds that require control measures and identify appropriate control measures for particular species and specify the responsibilities of both public and private landholders for noxious weed control.

4.2.6 Rural Fires Act 1979

The *Rural Fires Act 1979 (RF Act)* seeks to coordinate bushfire fighting and prevention in NSW and to protect persons and the environment.

Section 89J of the EP&A Act states that a bush fire safety authority under section 100B of the *Rural Fires Act 1997 (RF Act)* is not required for State Significant Development.

However, the DGR's could contain requirements to address bushfire management, if the Director General chooses to seek advice from the Commissioner of the RFS.

4.2.7 Western Sydney Parklands Act 2006

The WSP Act outlines the establishment of the Western Sydney Parklands Trust, its role in relation to management of the Western Sydney Parklands, and the process for adding land to the parklands.

The Act is supported by the Western Sydney Parklands SEPP, addressed further under **Section 4.3**.

The WSP Act also requires the preparation of a Plan of Management for the Western Sydney Parklands which is to include potential for revenue generating activities to support the Parklands. A Plan of Management has

been adopted by the Act and is considered in this report under **Section 5.1.9** of this report.

4.3 Environmental Planning Instruments

The following planning instruments are applicable to the site:

- State Environmental Planning Policy (Western Sydney Parklands) 2009 (Parklands SEPP);
- State Environmental Planning Policy (State and Regional Development) 2011 (State and Regional Development SEPP);
- State Environmental Planning Policy (Major Development) 2005 (Major Development SEPP);
- State Environmental Planning Policy No 55 – Remediation of Land (SEPP 55);
- Blacktown Local Environmental Plan 1988 (BLEP 1988).

4.3.1 State Environmental Planning Policy (Western Sydney Parklands) 2009 (Parklands SEPP)

The Parklands SEPP provides planning controls that seek to enable the Western Sydney Parklands Trust to develop the Western Sydney Parklands into a multi-use urban parkland for Western Sydney. The policy seeks to achieve this through the following aims:

- Allowing for a diverse range of recreational, entertainment and tourist facilities in the Western Parklands;
- Allowing for a range of commercial, retail, infrastructure and other uses consistent with the Metropolitan Strategy, which will deliver beneficial social and economic outcomes to Western Sydney;
- Continuing to allow for and facilitate the location of government infrastructure and service facilities in the Western Parklands;
- Protecting and enhancing the natural systems of the Western Parklands, including flora and fauna species and communities and riparian corridors;
- Protecting and enhancing the cultural and historical heritage of the Western Parklands;
- Maintaining the rural character of parts of the Western Parklands by allowing sustainable extensive agricultural, horticulture, forestry and the like;
- Facilitating use of the Western Parklands to meet a range of community needs and interests, including those that promote health and well-being in the community;
- Encouraging the use of the Western Parklands for education and research purposes, including accommodation and other facilities to support those purposes;
- Allowing for interim uses on private land in the Western Parklands if such uses do not adversely affect the establishment of the Western Parklands or the ability of the Trust to carry out its functions as set out in section 12 of the *Western Sydney Parklands Act 2006*;

- Ensuring that development of the Western Parklands is undertaken in an ecologically sustainable way.

Under Clause 9 of the Parklands SEPP, land within the Western Sydney Parklands is unzoned. Classes of development that may be carried out with or without consent are as follows (as per Clause 11):

Development without consent -

- Cafés
- Community facilities
- Entertainment facilities
- Environmental facilities
- Environmental protection works
- Function centres
- Information and education facilities
- Kiosks
- Landscaping
- Maintenance depots
- Public administration buildings
- Recreation areas
- Recreation facilities (outdoor)
- Signage (for directional, informative or interpretive purposes)
- Ticketing facilities.

Clause 12, Development with consent, includes any development that is not specified above (excluding residential, which is prohibited). The proposal is therefore permissible under the SEPP.

Any development within the Parklands will be assessed against the 'Matters to be considered by the consent authority – generally' set out in Clause 12 of the Parklands SEPP. These matters include the aims of the Parklands SEPP and considerations regarding the impact of development on:

- Utilities and services
- The natural environment and habitats
- Access to public space and recreational uses
- Surrounding residential amenity
- Significant views, flooding, heritage, traffic and parking.

It also requires consistency with any plan of management of the Western Sydney Parklands.

4.3.2 State Environmental Planning Policy (State and Regional Development SEPP) 2011

The State and Regional Development SEPP 2011 identifies development to be considered as State Significant under Division 4.1 of the EP&A Act (discussed earlier under **Section 4.2.2** of this report). The Western Sydney Parklands is identified in Schedule 2 of the State and Regional Development SEPP as an 'identified site' to which the State Significant Development provisions apply for any development with a capital investment value of greater than \$10 million.

4.3.3 State Environmental Planning Policy No 55 – Remediation of Land (SEPP 55)

SEPP 55 aims to promote the remediation of contaminated land for the purpose of reducing the risk to human health or any other aspect of the environment.

Where contamination is identified, remediation will need to satisfy the requirements of SEPP 55.

4.3.4 Blacktown Local Environmental Plan 1988 (BLEP 1988)

Under the BLEP 1988, the site is zoned as *Western Sydney Parklands SEPP*. Accordingly, land uses and their permissibility is principally controlled via the SEPP.

The site is not listed as a Heritage Item under BLEP 1988.

Clause 3 of the BLEP 1988 notes that this instrument does not apply to land to which the Parklands SEPP applies.

4.4 Policies and guidelines

Western Sydney Parklands Plan of Management 2020

The Western Sydney Parklands Plan of Management was prepared in December 2010 and provides the management and strategic directions for the Western Sydney Parklands over the next decade to 2020.

The relevant provisions and guidelines of this plan are addressed in detail under **Section 5.1.9** of this report.

5 Preliminary Environmental Impact Assessment

The Preliminary Environmental Impact Assessment provides a broad outline of the likely environmental impact of the proposal and identifies the key development issues for resolution as part of the Environmental Impact Statement to accompany the forthcoming Stage DA. The key development issues, discussed at **Section 6** of this report, should assist the preparation of the Director General Requirements (DGR's).

The preliminary environmental assessment is structured against:

- The matters for consideration under Clause 12 of the Western Sydney Parklands SEPP;
- Inconsistency with Environmental Planning Instruments;
- Development potential;
- Consultation.

5.1 Clause 12 Western Sydney Parklands SEPP

Clause 12 provides various issues that the Consent Authority is to consider with respect to development at the Parklands.

These issues are relevant to assist with determining the key development issues and are considered below:

5.1.1 Aims of the Western Sydney Parklands SEPP

The aims of the Western Sydney Parkland SEPP have been identified under Section 4.1.1 of this Report. The proposal response to these is noted below:

Allowing for a diverse range of recreational, entertainment and tourist facilities in the Western Parklands

The proposal is consistent with this aim by accommodating a motel (tourist facility) and an All Abilities Playground on the site, as part of the proposed Concept Plan.

Allowing for a range of commercial, retail, infrastructure and other uses consistent with the Metropolitan Strategy, which will deliver social and economic outcomes to Sydney

The proposal is consistent with this aim by providing for commercial and retail uses. These uses may deliver direct social and economic benefits by expanding the provision of, and access to, such facilities in this part of Western Sydney.

The broader social and economic benefit is provided through the opportunity for the development and lease of the land to generate revenue for the continued establishment and operation of the urban parkland, and recreation offer available for the Greater Western Sydney population.

Continuing to allow for and facilitate the location of government infrastructure and service facilities in the Western Parklands

The development of the site supports the facilitation of government infrastructure and service facilities in the Parklands. As noted above, the proposed development and lease of the land will provide an income

stream for the Trust's general revenue, supporting improved financial investment into parkland infrastructure and facilities.

Protecting and enhancing the natural systems of the Western Parklands including flora and fauna species and communities in riparian corridors

This aim is responded to below under Aim 'Ensuring that development of the Western Parklands is undertaken in an ecologically sustainable way'.

Protecting and enhancing the cultural and historical heritage of the Western Sydney Parklands

The heritage schedules of the Western Sydney Parklands SEPP does not identify any items of environmental heritage within the site.

Maintaining the rural character of parts of the Western Parklands by allowing sustainable extensive agriculture, horticulture, forestry and the like

This aim is considered not directly applicable to the proposal.

However, indirectly the proposal supports achievement of this aim by providing an income revenue stream that will assist with the establishment and operation of the wider urban parkland. Subject to landscape design detail, the wider urban parkland may include agriculture, horticulture and forestry activities.

Facilitating public access to, and use and enjoyment of, the Western Parklands

The proposal enhances public access to the Parklands by developing land for the purposes of uses and activities that will be accessible for the wider community.

Facilitating use of the Western Parklands to meet a range of community needs and interests, including those that promote health and well-being in the community

The proposal supports community needs and interests. It includes an All Abilities Playground, which will promote health and well-being for youth.

Whilst an economic impact study may need to be undertaken as part of the EA, it is considered that proposed retail and commercial uses will expand the opportunity for improved accessibility to such facilities in this locality, as identified by retail analysis provided to the Trust.

Encouraging the use of the Western Parklands for education and research purposes, including accommodation and other facilities to support those purposes

As noted earlier, the development of the site is required to assist with the Trust's revenue to establish and operate the wider urban parkland. This may include the operation of education and research activities, including buildings and associated facilities.

Allowing for interim uses on private land in the Western Parklands if such uses do not adversely affect the establishment of the Western Parklands or the ability of the Trust to carry out its functions as set out in Section 12 of the Western Sydney Parklands or the ability of the Trust to carry out its

functions as set out in Section 12 of the Western Sydney Parklands Act 2006

This aim of the SEPP is considered not applicable to the proposal.

Ensuring that development of the Western Parklands is undertaken in an ecologically sustainable way

Eco Logical Australia has undertaken a preliminary assessment of the proposal with copy of their advice at **Appendix D**. The report identifies that design and development of the concept plan and subdivision is affected by the following ecological issues:

Vegetation communities and threatened species

The proposal may involve some clearing of the Shale Plains Woodland. Under the indicative development outcome, this would be the woodland of moderate constraint within the southern and north west remnants. Shale Plains Woodland of high ecological constraint in the north east would be retained, though may require some edge clearing.

No threatened flora species were observed on the site at the time of the field survey. A targeted flora survey was undertaken to determine the presence of threatened flora species across the site, in particular Juniper-leaf Grevillea (*Grevillea juniperina* subsp. *Juniperina*) and Spiked rice flower (*Pimelea spicata*), however none were observed at the time of the survey.

No threatened fauna species were observed on the site at the time of the field surveys. Threatened fauna having the potential to occur include:

- Green and Golden Bell Frog (*Litoria aurea*) – EPBC and TSC Act;
- Cumberland Plain Land Snail (*Meridolum corneovirens*) – TSC Act;
- Swift Parrot (*Lathamus discolor*) – EPBC and TSC Act;
- Rainbow Bee-eater (*Merops ornatus*) – EPBC and TSC Act;
- Satin Flycatcher (*Myiagra cyanoleuca*) – EPBC and TSC Act;
- Black-chinned Honeyeater (*Melithreptus gularis gularis*) – TSC Act;
- Barking Owl (*Ninox connivens*) – TSC Act;
- Powerful Owl (*Ninox strenua*) – TSC Act;
- Large-eared Pied Bat (*Chalinolobus dwyeri*) – EPBC and TSC Act;
- Grey-headed Flying Fox (*Pteropus poliocephalus*) – EPBC and TSC Act;
- Eastern Freetail-bat (*Mormopterus norfolkensis*) – TSC Act;
- Large-footed Myotis (*Myotis macropus*) – TSC Act;
- Yellow-bellied Sheath-tail-bat (*Saccolaimus flaviventris*) – TSC Act;
- Eastern False Pipistrelle (*Falsistrellus tasmaniensis*) – TSC Act;
- Eastern Bentwing-bat (*Miniopterus schreibersii oceanensis*) – TSC Act; and

- Greater Broad-nosed Bat (*Scoteanax rueppellii*) – TSC Act

Further ecological studies would be required as part of the preparation of the Environmental Impact Statement to determine the impacts of development within the study area including a bat census undertaken at least over two consecutive nights and the preparation of 7 part tests.

Targeted surveys were carried out for the Cumberland Plain Land Snail, Green and Golden Bell Frog and threatened bird species. None have been observed on the site at the time of the surveys, however their presence cannot be ruled out due to potential habitat within the wider context. Latham's snipe (*Gallinago hardwickii*) a listed migratory bird species under the EPBC Act has been observed. However, the site is not considered an important habitat for this species due to low water flow within the drainage on the site, sighting of only two individuals, weed infestation and urban disturbance on the site.

The east/west drainage channel

As noted under Section 2, there is a drainage channel that connects the culvert near Rooty Hill Road South to the culvert under the M7 (east/west drainage channel).

The drainage channel has been previously straightened, presumably during earlier development higher in the catchment, resulting in geomorphic structure of any natural watercourse being destroyed.

It is proposed to improve site drainage. Preparation of the Environmental Impact Status will need to consider the status of the drainage channel under the *Water Management Act 2000*. The impact of any proposed piped drainage on water quality, and any clearing of Cumberland Plain Woodland to accommodate such infrastructure, would need to be assessed as part of the preparation of the Environmental Impact Statement.

Bushfire

Whilst bushfire impact is considered low, strategies will need to be developed to manage the potential risk.

Offsetting

Offsetting associated with the impact of the proposal on moderate constraint vegetation may be required. Of particular relevance is the potential impact to Shale Plains Woodland. Offsetting that consolidates with high constraints areas in the north east may be the preferred location to deal with any loss.

As part of the preparation of the Environmental Impact Statement, further resolution of the above ecological issues, with associated mitigation measures would be prepared.

5.1.2 The impact on drinking water catchments and associated infrastructure

It is considered that this matter is not relevant to the proposal. It is understood from advice from J. Wyndham Prince that Eastern Creek, located to the east of the site, does not form part of the drinking water catchment.

The Parklands does accommodate associated water infrastructure, however this is confined to pipes and channels to the south of the M4 Motorway, all of which converge on Prospect Reservoir.

5.1.3 The impact on utility services and easements

A preliminary assessment of servicing infrastructure has been undertaken by J. Wyndham Prince, with a copy of their advice and recommendations provided at **Appendix E**.

The assessment concludes that the site can be serviced with all utilities to support the proposed development, with appropriate augmentation works. However a detailed assessment of servicing infrastructure will need to be undertaken as part of the preparation of the Environmental Assessment. This is discussed further in this PEIA.

As noted earlier, a high pressure gas main easement is located on the site, running north/south parallel to the eastern/M7 boundary. The main is operated by Jemena. A buffer will be provided to the Gas Main, as illustrated on the Preliminary Structure Plan at Figure 8. Consultation with Jemena will also be required during the EIS phase to identify operational issues and develop specific design guidelines requirements that need to be established as part of the Environmental Impact Statement documentation. This may include construction management measures and access requirements to the easement.

5.1.4 The impact on the environmental conservation areas and the natural environment, including endangered ecological communities

Ecological issues associated with the proposal are discussed throughout this PEIA.

Impact to the natural environment will be considered as part of the design and development of the Staged DA, discussed further in this PEIA.

Preliminary land management investigations by Douglas Partners notes that previous and current land use activities on the site may create the potential for minor contamination common to such previous uses. A copy of this advice is provided at **Appendix F**.

Assessment of the true level of contamination and appropriate remediation strategies will require investigation, as discussed further in this PEIA.

5.1.5 The impact on the continuity of the Western Parklands as a corridor linking core habitat such as endangered Cumberland Plain Woodland

The site is well separated from the north/south corridor of the urban parkland, which extends from Rooty Hill to South West Sydney. The M7 contains the site from the broader urban parkland, accordingly it is not

considered in urban design terms to be a 'core' area in providing a corridor linking habitat.

However, as noted earlier, the site does contain remnant patches of Shale Plains Woodland, which is a sub-community of the Cumberland Plain Woodland. The impact of the proposal to the Shale Plain Woodland will require investigation as part of the preparation of the EIS, including off setting to balance any potential loss. This is discussed further in this PEIA.

5.1.6 The impact on the Western Parkland's linked north-south circulation and access networks and whether development will enable access to all parts of the Western parklands that are available for recreational use

A combined response to Aim 5.1.6 and 5.1.7 is provided below.

5.1.7 The impact on the physical and visual continuity of the Western Parklands as a scenic break in the urban fabric of Western Sydney

In urban design terms, the Eastern Creek Business Hub will be an 'island site' from the broader urban parkland. It is well separated from the main corridor of the urban parkland by the M7 Motorway. As a contained land parcel, the proposal should not impact on the north/south circulation and access networks nor the visual continuity of the urban parkland as a scenic 'green break'.

5.1.8 The impact of public access to the Western Parklands

The establishment of the Eastern Creek Precinct and its role with income generation to the Trust also assists with improving access to the wider urban parkland. Revenue generated from the leases will assist with ongoing establishment of the physical infrastructure associated with the urban parkland including pedestrian paths, signage and shelter.

Public recreation facilities, such as an All Abilities Playground, will enhance public access to the site by providing a formal recreation area for local children and their families.

5.1.9 Consistency with any Plan of Management and/or any adopted Precinct Plan

In December 2010, Western Sydney Parklands Plan of Management 2020 was adopted after a period of consultation. The Plan of Management provides direction to the operation and management of the Parklands until 2020. The Plan of Management provides the following vision:

Western Sydney Parklands is a place for people of all backgrounds to meet, celebrate, learn, play and appreciate the environment. The Parklands will be a venue for communities to create and manage a new sustainable future on the Cumberland Plain.

Various Guiding Principles and Strategic Directions are provided to deliver the Vision. Of relevance to the forthcoming DA are the following Principle and Strategic Direction:

- Plan of Management Principle: *The Parklands will be...viable economically for the Trust and for those using the land;* and

- Plan of Management Strategic Direction: Parklands Development and Management, Objective 3 (1) *Develop Business Hubs in appropriate locations in the Parklands.*

The Plan of Management notes the funding context of the Plan of Management, and Trust overall. The Trust is developing an income stream of \$10 million per annum within the life of the Plan of Management (10 years). To assist with this, a significant portion of income will be derived from developing long term leases for business purposes on 2 percent of its land over the long term. Both the above principal and strategic direction will guide this.

The forthcoming Stage DA is therefore compliant with the Western Sydney Parklands Plan of Management. It provides for an appropriately located business hub (non parkland use), separated from the main Parklands by the M7 Motorway, and will significantly assist with revenue generation through long term leases.

5.1.10 Impact on surrounding residential amenity

Residential land uses are located immediately to the west of the site.

Interface issues of development to Rooty Hill Road South will be considered and developed as part of the Environmental Impact Statement, which is discussed further in this PEIA. Design Guidelines will be established that support appropriate edge treatment to Rooty Hill Road South, specifically through landscape setbacks and building design, which is discussed further in this PEIA.

Whilst an economic (retail) impact study may need to be undertaken as part of the design and development of the Staged DA, in strategic planning terms, the proposal supports improvements to wider residential amenity through the provision of contemporary retail and commercial uses. Local retail on the corner of Rooty Hill Road South and Evans Road is small scale and limited in its services.

The provision of an All Abilities Playground will expand recreational facilities for local children and families.

Traffic impacts, and associated management measures, to the Eastern Creek Residential Area to the west of the site will need to be considered as part of the design and development of the Concept Proposal and Subdivision. This is discussed further in this PEIA.

5.1.11 Impact on significant views

The M7 largely constrains views to/ from the wider urban parkland that is located to the east. The M7 is higher than the site and screens such views.

Views to Rooty Hill are largely screened by the tall tree planting in the adjoining Morreau Reserve.

Whilst at this Preliminary Environmental Impact Assessment phase it is considered that the visual impact of the proposal would be low to the parklands, a visual assessment of the impact of the proposal to its wider context would need to be undertaken to determine any impacts and associated mitigation measures such as landscaping and building design controls including height, scale, materials and finishes. This is discussed further in this PEIA.

5.1.12 Impact on drainage patterns, ground water, flood patterns and wetland viability

As discussed under Section 2 of this PEIA, there is drainage issues associated with the site. The performance of the stormwater drainage is poor, with pooling water, and in some locations creating environmental problems such as algal blooms. Improvement to the site drainage is required and would need to be considered as part of the design and development of the Concept Proposal and Subdivision.

The east/west drainage channel may have riparian value, and needs further consideration through concept proposal development.

5.1.13 Impact on heritage items

Heritage

As noted earlier, the site is not affected by any heritage listings. The site is however located in the vicinity of heritage items.

Preliminary advice prepared by Graham Brooks and Associates concludes that the likely heritage impact will be limited to that of views to these adjacent heritage items. A copy of this advice is provided at **Appendix G**.

A formal heritage impact assessment is not required, and the heritage assessment of such could be considered as part of the visual impact assessment noted above.

Archaeology

A preliminary archaeological assessment has been undertaken by Kayandel Archaeological Services, with a copy of their advice provided at **Appendix H**.

Preliminary review of current desktop information, aerial photography and a site visit suggests that the site does not have any recorded Archaeological deposits.

However, areas of intact archaeological cultural deposit occur where existing soil profiles have been minimally disturbed. A preliminary review of previous land uses on the site indicates approximately 50% of the site is disturbed by past agricultural activity, dams, infrastructure and built structures. Areas of lower (minimal) levels of disturbance are therefore present and these may contain intact subsurface archaeological potential.

Further archaeological investigation is required to confirm archaeological potential in areas of lower (minimal) disturbance as part of the design and development of the Concept Proposal and Subdivision. This is discussed further below in this PEIA.

5.1.14 Impact on traffic and parking

Traffic Planners Traffix Pty Ltd has undertaken a preliminary assessment of the proposal, and a copy of their advice is provided at **Appendix I**.

Reduced traffic volumes on Rooty Hill Road since the opening of the M7, and the regional accessibility offered by the M7, suggests that the environmental capacity of the surrounding road network is capable to accommodate the development of the Eastern Creek Business precinct.

The final location of the principal access road to the site may be dependent on ecological and other factors. However, in principle, its location as illustrated by this report is approximately 260 metres from

Great Western Highway is considered appropriate. Preference is also for any principal site access from Rooty Hill Road South to be located south of Cable Place, as currently illustrated. Further, the school appears to currently operate an effective school drop off/pick up access plan as discussed under Section 2, and it is considered that principal access to the site generally in this location should not impact on its operation.

With respect to Church Street providing secondary access to the site, the proximity of Beggs Street (approximately 150m south) may require limiting access left in/ left out from Beggs Street to Rooty Hill Road South. This should maintain efficient and safe operation of this intersection. Preference is to close this road; however this would interfere with access to private lots outside the boundary of the PEA. If the Trust comes to obtain these lots in the future, Beggs Road could then be closed.

As noted above, the impact of traffic and environmental amenity to residential areas to the west of the Rooty Hill Road will need to be considered as part of the development of the concept plan and subdivision, and discussed further in this PEIA. Signal intersections will be at least required, to optimise intersection performance.

A detailed assessment on the traffic and parking impacts associated with the proposal will need to be undertaken as part of the design and development of the Concept Proposal and Subdivision to resolve impacts of the proposal. This is discussed further below in the PEIA.

5.2 Inconsistency with environmental planning instruments

The Western Sydney Parklands SEPP is the principal EPI applying to the site. The proposal is consistent with the SEPP.

As noted earlier, under Clause 9 (2) of the Western Sydney Parklands SEPP the land is unzoned. Clause 11 permits development with or without consent. The proposed development is permissible with consent under Clause 11 (2).

The proposal also satisfies the aims of the Western Sydney Parklands SEPP, as discussed under **Section 5.1**.

SEPP 55 applies to the site. For consistency with the provision of the SEPP, appropriate contamination assessment and remediation strategy will need to be prepared.

Blacktown LEP (1998) (As Amended) identifies the land to be zoned Special Uses.

As noted earlier, the objectives of the zone include:

- *To set aside land for the development of certain major long-term services and facilities, and special uses carried out by public authorities in an economic, safe and environmentally sensitive manner, and;*
- *To allow the identified land to be used for recreational or other purposes where that use does not conflict with the existing or likely future use of the land by public authorities.*

Although the Parklands SEPP is the principal EPI, and where there is an inconsistency with planning instruments the SEPP prevails, the proposal is considered consistent with the Special Uses zoning under the Blacktown LEP. Pending approval from the Minister, the land has been identified by the Western Sydney Parklands Trust (a government agency) to be suitable for the purposes of the proposed development. The

proposal will be planned to ensure that it is undertaken in accordance with economic and environmental considerations. The location is separate from the north/south recreational core of the urban parkland, accordingly will not conflict with this principal use.

5.3 Development potential

The Trust has received economic advice on the potential of such commercial and retail activities.

The advice is that the creation of such a precinct is viable on demographic trends, trade area characteristics and competing facilities.

Population growth is expected in this region, based on the available supply of land. Consequently, new dwelling activity is expected to be strong. Population growth is expected to generate similarly strong trade demand for large format retail/warehouse style facilities as envisaged by the proposal. There is an undersupply of such large format retailing within the area, and the proposed amount of around 30,000sqm is supportable.

Convenience style retail uses are also viable within the proposal, based on demand and supply of current facilities.

5.4 Consultation

Preliminary discussions have been held with officers at the NSW Department of Planning, the Blacktown City Council Mayor and General Manager, State Members of Parliament, and some Local Members regarding the proposal.

However, a full community and stakeholder consultation process needs to be undertaken as part of the preparation of the Environmental Impact Statement which is outlined further under **Section 6**.

6 Key development issues

The Preliminary Environmental Impact Assessment has identified the following key issues for resolution through the Environmental Impact Statement (EIS) to accompany the Staged DA.

- Urban design
- Visual Impact
- Landscape
- Ecology and Bushfire
- Traffic and Access
- Utilities and Services
- Land management
- Subdivision Documentation
- Economic (retail) impact
- Consultation

These issues should inform the preparation of the Director General Requirements.

6.1 Urban design

Subject to the receipt of DGR's, a final Structure Plan would be produced outlining the development layout and staging of the Business Hub. The Structure Plan would illustrate the distribution of land use/activities, road network and hierarchy, access, land parcels, core environmental zones (such as protection zones, wetlands) and core infrastructure zones (such as drainage, easements).

Site Design Guidelines will need to be prepared to inform future project applications for development on the site, in accordance with the Structure Plan. The Guidelines will form part of the Concept Proposal documentation. Subject to the receipt of DGR's, it is anticipated that the guidelines will provide development guidance related to:

- Allotments
- Built form
- Landscape
- Streetscape and neighbourhood interface
- Design quality
- Vehicle access and parking
- Pedestrian and cycle access
- Environmental management (including stormwater management and reuse)
- Sustainable design
- Crime prevention
- Materials, lighting, signage.

The guidelines will provide both a framework for site development; and to protect the amenity of established residential areas to the west.

An illustrative plan would be produced providing an indicative development outcome in context with the Structure Plan and Design Guidelines.

The urban design of the site will be largely influenced by a number of key development issues, discussed in detail below.

6.2 Visual impact

Subject to receipt of DGR's, a Visual Impact Assessment would be prepared to consider built form, landscape, and scenic quality and heritage impact issues.

The Visual Impact assessment will provide a detailed study of the impact of development to determine appropriate height/scale of buildings and establish building envelopes, balanced with maintaining district views of important landscape features to and from the broader parklands. Visual impact/interface issues associated with the established residential area to the west of Rooty Hill Road would also be assessed and assist with the preparation of Design Guidelines.

Visual Impact to heritage items in the vicinity of the site would also be considered as part of the assessment.

The Visual Impact Assessment would inform built form and landscape controls, to be provided as part of the Design Guidelines.

6.3 Landscape and Setting

A detailed landscape plan needs to be prepared as part of the Stage DA documentation. The plan should outline landscape design aspects of the proposal and proposed suite of plants and species to be used in future development proposals. The plan would support landscape principles provided as part of the Design Guidelines. Preparation of the plan would be informed by the detailed urban design process to site planning and development that would be undertaken through the preparation of the Environmental Impact Statement.

The visual impact assessment would also inform the landscape plan through selection of plant species and location to mitigate visual impacts associated with the proposal, particularly views to and from the wider parklands and adjacent urban areas.

To appreciate the context, setting and purpose of the Eastern Creek Business Hub, the proposed design and subdivision needs to be considered within the context of the broader urban parkland. Pending receipt of the DGR's, the landscape vision for the Eastern Road Sports and Bungarribee Precincts, as illustrated under Figure 21 of this report, would also be provided as part of the Staged DA to demonstrate this context.

The landscape vision will assist with illustrating a proposed design of the urban parkland; and the relationship of the proposal with its parklands setting including linkages, circulation, public access and scenic issues.

As noted earlier in this PEIA, consent will not be sought under the Staged DA for the landscape vision for the Eastern Road and Bungarribee Precincts. Its purpose will be to illustrate the context and setting of the Eastern Creek Business Hub, including its role to the support the income revenue to develop the urban parkland.

6.4 Ecology and bushfire

A full ecological assessment will need to be undertaken as part of the design and development of the Concept Proposal and Subdivision. Subject to receipt of DGR's the assessment would need to include:

- Definition of the status of the east/west drainage channel under the Water Management Act 2000.
- A bat census undertaken over at least two consecutive nights to determine the status of potential habitat of threatened bat species within the site.
- Assessment of any clearing of Shale Plains Woodland and potential impacts in accordance with EPBC Significant Impact Guidelines – Matters of National Environmental Significance (DEWHA 2009), DECC Assessment of Significance Guidelines (2007), and the provisions of the EPBC Act, EP&A Act and TSC Act, including the recent Commonwealth Cumberland Plain Shale Woodlands and Shale Gravel Transitional Forest condition criteria and SEWPAC policy on Cumberland Plain Shale Woodlands and Shale-Gravel Transition Forest (Policy Statement 3.31).
- 7 Part Tests of Threatened Species. Such assessment of significance would be undertaken in relation to species, communities, habitat and processes listed under either the TSC Act or the *Fisheries*

- *Management Act 1994 (FM Act)* and prepared in accordance with *DECC Assessment of Significance Guidelines (2007)*.
- Assessment against Department of Sustainability, Environment, Water, Population and Communities (SEWPAC) *Significant Impact Guidelines* for any EPBC Act listed species.
- Bushfire management strategies that reduce risk of bushfire (albeit low) including setbacks, Asset Protection Zones (APZ) and other strategies under the *Planning for Bushfire Protection Guidelines* (Rural Fire Service). Other guidelines may also need to be considered, such as the *Integral Energy Tree Management Plan*, regarding the provision of infrastructure and setback requirements for bushfire protection.
- Offsetting strategies associated with any potential loss of the Shale Plains Woodland, if and where this may occur.
- Strategy for noxious weeds, prepared in accordance with the Noxious Weed Act.

6.5 Traffic and Access

Detailed traffic and access assessment will need to be undertaken through the design development of the concept plan and subdivision to confirm traffic impacts and augmentation measures, where required.

Subject to receipt of the DGR's, the following issues will need detail consideration as part of the Staged DA:

- Close examination of the operating performance of the existing road network, based on AM and PM movements on weekdays, and peak periods on weekends associated with the Blacktown Olympic Venue;
- Any augmentation measures to manage traffic impacts including land use and density mix, traffic management measures;
- Traffic conditions and safety issues associated with the site's vicinity to the Eastern Creek Public School;
- Intersection location/s;
- Internal road arrangements, hierarchy and design;
- On site parking;
- Opportunities to maximise public transport usage;
- Pedestrian and cycle access.

Closure of Belmore and Beggs Road Reservations will also be investigated as part of the design development of the concept plan and subdivision.

6.6 Utilities and Services

Above a detailed assessment of gas, water, electricity, telecoms, sewer and stormwater requirements associated with the design development of the concept plan and subdivision, subject to receipt of the DGR's, the Staged DA would also need to consider the augmentation of infrastructure, including:

- Construction of a new sewer under the M7, connecting to the existing 900mm sewer located east of the M7;
- Use of 300mm potable water mains adjacent to the site;
- Provision of high voltage electrical infrastructure, connecting with a planned new Zone Substation at Doonside;

- Provision of broadband services (above standard telephone services provided by Telstra);
- Investigation of a formal channel to be constructed from the Rooty Hill Road South culvert to the M7 culvert to assist with improving stormwater drainage issues identified earlier in the PEA;
- Stormwater management and drainage that include opportunities for Water Sensitive Urban Design that balance the collection of Stormwater with vegetation management to ensure standing water on site is improved in quantity and quality.

Liaison with servicing authorities such as Sydney Water, Integral Energy, Telstra and Jemena will be required as part of the detailed investigation work undertaken during the preparation of the Environmental Impact Statement.

The impact of development on the gas main will also need full consideration. Consultation will be required to be undertaken with the operator, Jemena. Pending discussions with Jemena, a Risk Assessment may be required to determine appropriate development controls specific to the site.

6.7 Land management

Subject to receipt of DGR's, assessments will need to be undertaken in relation to:

- Geotechnical/geology; and
- Contamination.

Geotechnical/geology

Subject to the receipt of DGR's, detail investigation of site geotechnical issues will be undertaken, with appropriate land management recommendations. Preliminary investigations advise that geotechnical constraints to development could be managed/overcome using engineering practices. Issues may include moderate salinity and reactivity of soils.

Contamination

With respect to contamination, Phase 1 Contamination assessment needs to be undertaken as part of the preparation of the Environmental Impact Statement. An assessment is required due to past land uses and potential contamination associated with dumped stockpiles of soil and rubble, as noted under section 2 of this report.

Where contamination is identified, a Remediation Action Plan would be prepared in accordance with SEPP 55, and submitted as part of the Staged DA documentation.

Subject to the receipt of the DGR's, the Phase 1 Assessment should consider:

- Potential pesticides and heavy metals in surface soils associated with past agricultural activities;
- Potential use of bonded asbestos pipes for drainage associated with former market gardens;
- Potential bonded asbestos beneath and around the footprints of existing and former houses and sheds;
- Potential contaminants (particularly bonded asbestos) contained within the dumped stockpiles of soil and rubble observed in southern

- portion of site;
- Potential localised areas of past land filling (if and where this has occurred on the site).

It is noted that no respirable asbestos has been encountered within separate tests carried out for the PEIA.

6.8 Archaeology

An archaeological assessment will need to be undertaken of the site to confirm archaeological deposits. Subject to the receipt of the DGR's, it is recommended that the approach to the assessment is as follows:

1. Methods in increasing visibility with minimal impact to the ground surface are explored prior to the completion of a pedestrian archaeological survey with registered Aboriginal stakeholders. This is to inform the approach to undertake archaeological assessment of the application areas. Overgrazing is recommended as one such method.
2. A detailed Aboriginal Archaeological Assessment is undertaken to confirm archaeological deposits particularly in areas of minimal disturbances. This assessment should address the DECCW requirements as outlined in Attachment 1 of the Kayandel Report (**Appendix H**), including identification and consultation with stakeholders.
3. Based on the outcomes of 2 above, a Cultural Heritage Management Plan (CHMP) for the application area and/or integration of the application area into existing CHMP/conservation management strategies may be prepared.

It is noted that where non-intrusive methods for increasing visibility cannot be implemented (bullet point 1 above), it may be necessary to undertake intrusive methods to effectively assess the archaeological potential. Such works are able to be completed under Requirement 15C of the Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales (CoAP) assuming all requirements included within the Aboriginal Heritage Consultation Requirements for Proponents (CR) have been complied with.

6.9 Subdivision documentation

Appropriate documentation will be required to seek Development Approval for the Super Lot Subdivision, as illustrated on the Structure Plan documentation discussed under 6.1.

This may include:

- Draft Subdivision Plan/s; and
- Draft Section 88B Instruments associated with the impact to, and creation of, any easements.

(Final Subdivision documentation would be prepared/issued following consent, for registration under a Subdivision Certificate).

6.10 Economic (retail) impact assessment

Whilst the Trust has received advice on the retail potential of the site, as the project develops through the Environmental Impact Statement phase the retail and economic issues associated with the proposal will need to be reviewed and updated in response to the final Concept Proposal. This may include any additional local economic impact requirements deemed required by the Director General.

6.11 Consultation Strategy

A consultation strategy is currently being drafted by Kathy Jones and Associates.

Individuals and organisations for consultation may include (but not limited to) Blacktown Council, adjacent residents, Eastern Creek Public School, Jemena (Gas Pipeline), Integral Energy, Sydney Water, Roads and Traffic and Authority and other servicing infrastructure agencies.

Pending receipt of the DGR's, the consultation strategy would be finalised to reflect any additional requirements by the Director General.

It is requested that the DGR's should nominate a preferred catchment area for consultation with the residential areas adjacent to the site.

7 Conclusion

This report has been prepared on behalf of the Western Sydney Parklands Trust in respect to a forthcoming Staged Development Application for a Concept Proposal (Site Layout, Street Network, Building Envelopes, Design Guidelines) and Subdivision & Early Works to develop the Eastern Creek Business Hub, located within the Rooty Hill Precinct, Western Sydney Parklands.

The Staged DA will facilitate the structure and future development of the Business Hub to accommodate range of land use elements including convenience retail and large format/bulky good retail under future Crown lease (and complementary parkland activities of recreation, tourism and open space). Convenience retail and large format/bulky good retail activities will comprise only around 10.93 hectares of the 34 hectare site area (within the total parklands being 5,280 hectares of which the Trust holds 2,700 hectares). Although small in area, these will support revenue generation for the ongoing establishment and management of the wider Parkland.

The report demonstrates that the proposed project satisfies the criteria under Schedule 2, Clause 5 of State Environmental Planning Policy (State and Regional Development) 2011. The Capital Investment Value of the Concept Plan is approximately \$128 Million, with Subdivision and Early Works component valued at \$10 Million. The Minister for Planning and Infrastructure will be the consent authority as the DA will be public authority, other than a Council.

The Preliminary Environmental Impact Assessment has identified key development issues related to the future design and planning of the site under the preparation of the Staged DA. These include urban design, visual impact, landscape, ecology, bushfire, traffic and access, utilities and services, land management, economic impact and consultation. On receipt of the Director General Requirements, these issues (and any others the Director General requests) will be further assessed and developed through the preparation of the Environmental Impact Statement to accompany the DA.

It is recommended that the Minister for Planning and Infrastructure (or his delegate) declare under Schedule 2, Clause 5 of State Environmental Planning Policy (State and Regional Development) 2011 the proposal to be development to which Part 4, Division 4.1 of the EP & Act 1979 (as Amended) applies and issue Director General Requirements.

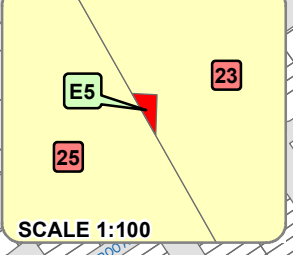
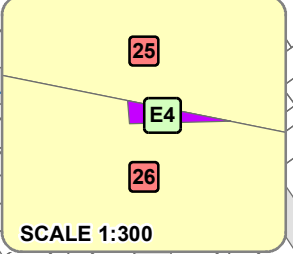
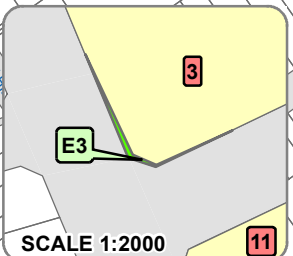
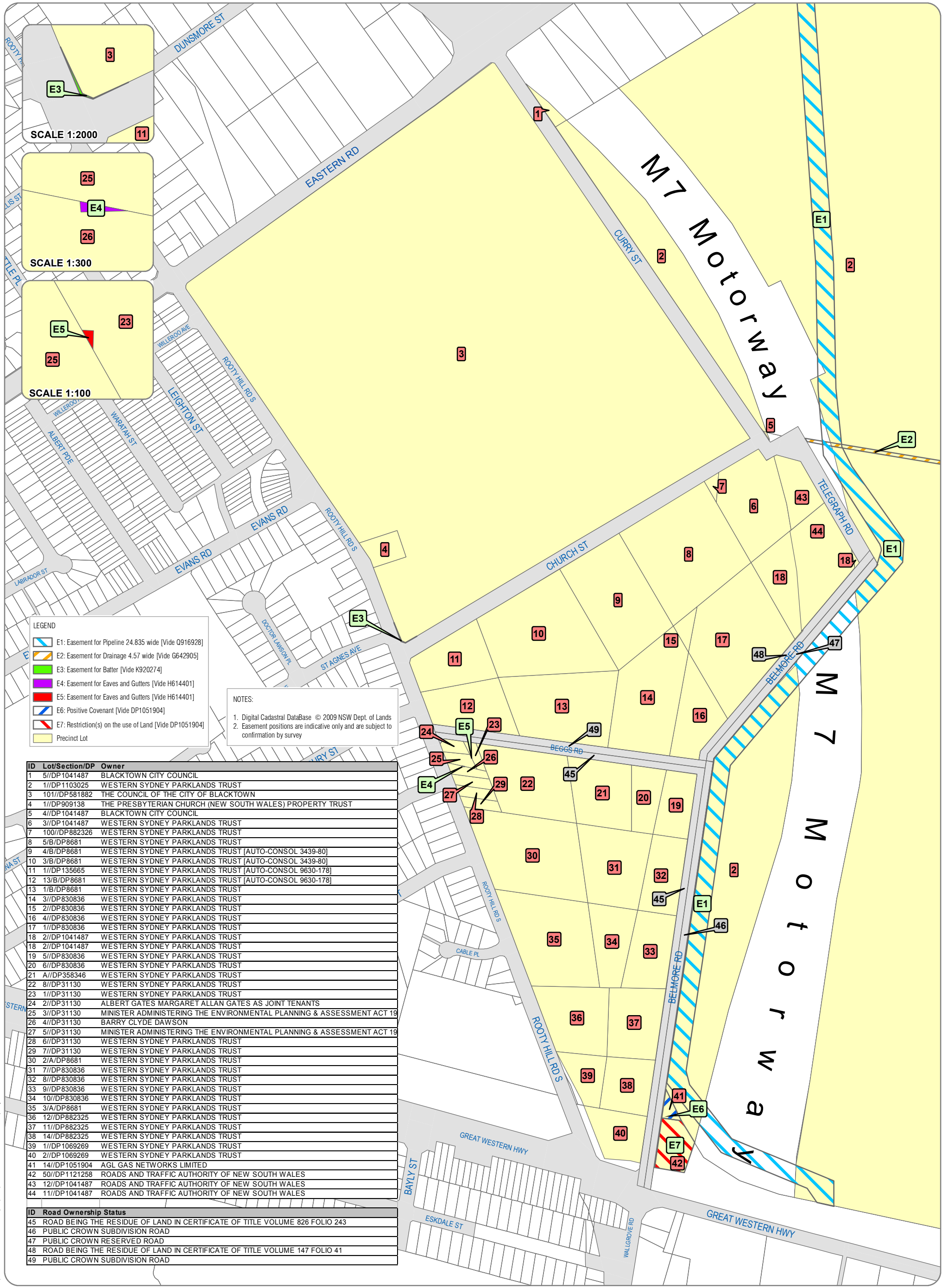


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**Western Sydney Parklands Eastern Creek Business Hub
Request for Director General Requirements**

Appendix A

**ID Land Survey
Prepared by Whelans Insites**



LEGEND

- E1: Easement for Pipeline 24.835 wide [Vide Q916928]
- E2: Easement for Drainage 4.57 wide [Vide G642905]
- E3: Easement for Batter [Vide K920274]
- E4: Easement for Eaves and Gutters [Vide H614401]
- E5: Easement for Eaves and Gutters [Vide H614401]
- E6: Positive Covenant [Vide DP1051904]
- E7: Restriction(s) on the use of Land [Vide DP1051904]
- Precinct Lot

NOTES:

1. Digital Cadastral DataBase © 2009 NSW Dept. of Lands
2. Easement positions are indicative only and are subject to confirmation by survey

ID	Lot/Section/DP	Owner
1	5//DP1041487	BLACKTOWN CITY COUNCIL
2	1//DP1103025	WESTERN SYDNEY PARKLANDS TRUST
3	101//DP581882	THE COUNCIL OF THE CITY OF BLACKTOWN
4	1//DP909138	THE PRESBYTERIAN CHURCH (NEW SOUTH WALES) PROPERTY TRUST
5	4//DP1041487	BLACKTOWN CITY COUNCIL
6	3//DP1041487	WESTERN SYDNEY PARKLANDS TRUST
7	100//DP882326	WESTERN SYDNEY PARKLANDS TRUST
8	5//DP8681	WESTERN SYDNEY PARKLANDS TRUST
9	4//DP8681	WESTERN SYDNEY PARKLANDS TRUST [AUTO-CONSOL 3439-80]
10	3//DP8681	WESTERN SYDNEY PARKLANDS TRUST [AUTO-CONSOL 3439-80]
11	1//DP135665	WESTERN SYDNEY PARKLANDS TRUST [AUTO-CONSOL 9630-178]
12	13//DP8681	WESTERN SYDNEY PARKLANDS TRUST [AUTO-CONSOL 9630-178]
13	1//DP8681	WESTERN SYDNEY PARKLANDS TRUST
14	3//DP830836	WESTERN SYDNEY PARKLANDS TRUST
15	2//DP830836	WESTERN SYDNEY PARKLANDS TRUST
16	4//DP830836	WESTERN SYDNEY PARKLANDS TRUST
17	1//DP830836	WESTERN SYDNEY PARKLANDS TRUST
18	2//DP1041487	WESTERN SYDNEY PARKLANDS TRUST
19	2//DP1041487	WESTERN SYDNEY PARKLANDS TRUST
20	5//DP830836	WESTERN SYDNEY PARKLANDS TRUST
21	A//DP358346	WESTERN SYDNEY PARKLANDS TRUST
22	8//DP31130	WESTERN SYDNEY PARKLANDS TRUST
23	1//DP31130	WESTERN SYDNEY PARKLANDS TRUST
24	2//DP31130	ALBERT GATES MARGARET ALLAN GATES AS JOINT TENANTS
25	3//DP31130	MINISTER ADMINISTERING THE ENVIRONMENTAL PLANNING & ASSESSMENT ACT 19
26	4//DP31130	BARRY CLYDE DAWSON
27	5//DP31130	MINISTER ADMINISTERING THE ENVIRONMENTAL PLANNING & ASSESSMENT ACT 19
28	6//DP31130	WESTERN SYDNEY PARKLANDS TRUST
29	7//DP31130	WESTERN SYDNEY PARKLANDS TRUST
30	2//A//DP8681	WESTERN SYDNEY PARKLANDS TRUST
31	7//DP830836	WESTERN SYDNEY PARKLANDS TRUST
32	8//DP830836	WESTERN SYDNEY PARKLANDS TRUST
33	9//DP830836	WESTERN SYDNEY PARKLANDS TRUST
34	10//DP830836	WESTERN SYDNEY PARKLANDS TRUST
35	3//A//DP8681	WESTERN SYDNEY PARKLANDS TRUST
36	12//DP882325	WESTERN SYDNEY PARKLANDS TRUST
37	11//DP882325	WESTERN SYDNEY PARKLANDS TRUST
38	14//DP882325	WESTERN SYDNEY PARKLANDS TRUST
39	1//DP1069269	WESTERN SYDNEY PARKLANDS TRUST
40	2//DP1069269	WESTERN SYDNEY PARKLANDS TRUST
41	14//DP1051904	AGL GAS NETWORKS LIMITED
42	50//DP1121258	ROADS AND TRAFFIC AUTHORITY OF NEW SOUTH WALES
43	12//DP1041487	ROADS AND TRAFFIC AUTHORITY OF NEW SOUTH WALES
44	11//DP1041487	ROADS AND TRAFFIC AUTHORITY OF NEW SOUTH WALES
45	ROAD BEING THE RESIDUE OF LAND IN CERTIFICATE OF TITLE VOLUME 826 FOLIO 243	
46	PUBLIC CROWN SUBDIVISION ROAD	
47	PUBLIC CROWN RESERVED ROAD	
48	ROAD BEING THE RESIDUE OF LAND IN CERTIFICATE OF TITLE VOLUME 147 FOLIO 41	
49	PUBLIC CROWN SUBDIVISION ROAD	

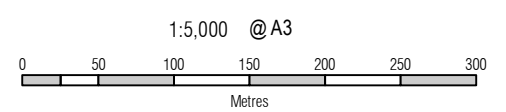
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No.	Date	Revision Details	INI
B	30-04-2010	Ownership information updated, Easements added	KDS
A	20-07-2009	Table Amended	SAS



CHECKED BY/DATE: KDS/07-05-2010
 APPROVED BY/DATE: DWF/07-05-2010
 GIS REF: F719-G-003b.mxd
 JOB REF: F719

CO-ORDS: MGA
 DATUM: N/A
 DATE OF PLAN: 07-05-2010





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**Western Sydney Parklands Eastern Creek Business Hub
Request for Director General Requirements**

Appendix B

Copy of DoPI Application Requirements (Section 8 of Form)

[New South Wales Government](#)
[Department of Planning](#)
[Skip to content](#)
[Home](#) > [Development Assessments](#) >

Request for DGRs for State Significant Development

- 1

Intro & notes

- 2

Applicant Details

- 3

Site Details

- 4

Development Details

- 5

Permissibility

- 6

Supporting Docs

- 7

Confirmation

Step 1

Introduction & notes

This form should be used to request Director-General's Requirements (DGRs) for State significant development in accordance with Part 4 of the *Environmental Planning & Assessment Act 1979*.

State significant development (SSD) is identified in Schedules 1 and 2 of *State Environmental Planning Policy (State and Regional Development) 2011* (SRD SEPP). The Minister may also declare (or 'call in') specified development on specified land to be SSD. For further information on the procedures for calling in development as State significant development please click here: [Ministerial 'call in'](#).

If your development does not meet the criteria in the SRD SEPP, and has not been called in by the Minister, it is not SSD and you should not request DGRs for SSD.

The Minister cannot grant consent to SSD that is wholly prohibited by an environmental planning instrument. Wholly prohibited development must be subject to a concurrent rezoning process. Partly prohibited development may also be subject to a concurrent rezoning process. If your development is partly or wholly prohibited, contact the Department before lodging a request for DGRs for SSD.

You must submit a supporting document with this request. The supporting document should include the following information:

1. Site details: Provide high-quality aerial photographs, maps or figures that clearly depict the following:
 - o the local and regional context of the proposal,
 - o surrounding development and any potentially affected properties,
 - o the location of key infrastructure and environmental features
2. Development description: Provide a clear and concise summary of the proposal that describes the types of activities that will be undertaken during each stage of the development.
3. Permissibility and Strategic Planning: Identify the strategic planning documents, environmental planning instruments and key development standards applying to the development, including any development standards not being met
4. Impact identification and assessment: Identify and prioritise the expected environmental impacts (positive and negative) associated with the development, based on a preliminary risk assessment. Briefly outline any strategies to address the impacts identified.
5. Justification: Explain why the site was chosen for the proposal and briefly discuss the alternatives considered. Outline the strategic context for the proposal, including the benefits it would bring to the wider region and/or State.
6. Consultation: Outline any consultation (with the community, local councils, other Government agencies) already undertaken and proposed to be carried out for the proposal
7. Capital investment value: Provide an accurate estimate of the cost of carrying out the proposal. If your proposal is identified as State significant development by a capital investment value threshold in Schedule 1 of SRD SEPP, a quantity surveyor's report confirming the capital investment value of the development is required.

The supporting document can be attached to the Request for DGRs in Step 6 of this form. N.B. the file(s) comprising your supporting documents must be in "pdf" format, non-secured and no more than 10Mb.

If the supporting documents do not contain sufficient information, the Department may request that is revised prior to issuing DGRs.

If your request is not accepted, you will be advised within 14 days of lodgement. If your request is accepted, you will receive Director-General's Requirements within 28 days of lodgement, unless otherwise agreed with the Director-General. Once you have lodged your request, you will be sent an email acknowledging your request and providing a reference number to use when discussing the request with the Department. The Department may request additional information from you at any time and may also amend the DGRs at any time.

Australian phone numbers and addresses are required when completing this form.

Next step



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**Western Sydney Parklands Eastern Creek Business Hub
Request for Director General Requirements**

Appendix C

**Cost Estimates
Prepared by WT Partnership**

SUMMARY

DRAFT FOR DISCUSSION

Date 26 October 2011

Ref	Description	Base Costs (Oct. '11)	Potential Staging of Development (+ Months)	Potential Cost Impact of Staging (+ %)	Amount \$
1	Demolitions, Alterations & Earthworks	\$ 1,594,266	tba	0%	\$1,594,266
2	Structures/Developed Areas & Associated Parking and Loading:				
2.01	Structure No. 4 - Outdoor Garden Retail	\$ 1,992,213	tba	0%	\$1,992,213
2.02	Structure No. 5 - Garden Centre	\$ 5,999,793	tba	0%	\$5,999,793
2.03	Structure No. 7 - Homemaker Centre	\$13,514,184	tba	0%	\$13,514,184
2.04	Structure No. 8 - Retail	\$12,707,976	tba	0%	\$12,707,976
2.05	Structure No. 9 - Bulky Liquor Outlet	\$ 3,660,984	tba	0%	\$3,660,984
2.06	Structure No. 10 - Bulk Office Supplies	\$10,492,893	tba	0%	\$10,492,893
2.07	Structure No. 11 - Self Storage	\$ 5,553,288	tba	0%	\$5,553,288
2.08	Structure No. 13 - Indoor Activity Centre	\$ 4,072,962	tba	0%	\$4,072,962
2.09	Structure No. 15 - Hotel	\$20,927,952	tba	0%	\$20,927,952
3	Soft Landscaping and Public Domain Areas;				
3.01	General Soft Landscaping Areas	\$ 370,787	tba	0%	\$370,787
3.02	Area 14 - All Abilities Play Area	\$ 673,517	tba	0%	\$673,517
4	Infrastructure & Services;				
4.01	Roads - Re-Instated Beggs Road	\$ 1,051,232	tba	0%	\$1,051,233
4.02	Roads - North/South Road with Entries on Church Street and Rooty Hill Road	\$ 1,900,862	tba	0%	\$1,900,862
4.03	Roads - Belmore Street Road Reserve	\$ -	tba	0%	\$0
4.04	Entry Signage	\$ 20,400	tba	0%	\$20,400
4.05	Services - Works to Connect to Existing Services	\$ 5,176,500	tba	0%	\$5,176,500
4.06	Services - New	\$ 4,284,000	tba	0%	\$4,284,000
4.07	Kiosks/Sub-Stations to Development Lots	\$ 173,400	tba	0%	\$173,400
5.05	Miscellaneous Allowances;				
5.06	Allowance for Modifications to Existing Road in Location of new Church Street Entry	\$ 204,000	tba	0%	\$204,000
5.07	Allowance for Modifications to Existing Road in Location of new Rooty Hill Road Entry (Including Widening, Filter Lane, Traffic Control, Junction Works, Pedestrian Crossing etc..)	\$ 408,000	tba	0%	\$408,000
5.08	Allowance for Street Furniture; to include Benches, Bins, Tables, Bollards, Bike Parking etc..	\$ 204,000	tba	0%	\$204,000
Sub-total					\$95,000,000
Construction Contingency (approx. 10%)					\$9,500,000
Sub-total					\$104,500,000
Prelims & Margin (Included in Rates)					\$0
Sub-total					\$104,500,000
Design & Project Management Fees (approx. 12%)					\$12,600,000
Sub-total					\$117,100,000
Project Contingency (approx. 10%)					\$11,710,000
Broad Order of Cost Estimate; Eastern Creek Business Hub Concept Plan - Possible Construction Costs (excl GST) As At October 2011					\$129,000,000

List of Exclusions.

- 1.00 Excludes Finance and Other Development Costs.
- 2.00 Excludes Consultancy Fees.
- 3.00 Excludes Authority Fees and Contributions.
- 4.00 Excludes Land Acquisition Costs Associated with Works in Areas Subject to Compulsory Purchase where appropriate.
- 5.00 Excludes Escalation of Capital Costs beyond October 2011.
- 6.00 Excludes Goods and Service Tax (GST).
- 7.00 Excludes any Allowance for works in contaminated land.
- 8.00 Excludes any Allowance for augmentation/amplification of existing services.
- 9.00 Excludes Extension or Amplification of Existing HV Services Outside of Site Boundary.
- 10.00 Excludes Extension or Amplification of Existing Stormwater Services Outside of Site Boundary.
- 11.00 Excludes Extension or Amplification of Existing Sewer Services Outside of Site Boundary.
- 12.00 Excludes Extension or Amplification of Existing Gas Services Outside of Site Boundary.
- 13.00 Excludes Extension or Amplification of Existing Telecommunications Services Outside of Site Boundary.
- 14.00 Excludes any Allowance for Staging of the Works.
- 15.00 Excludes any Allowance for Miscellaneous Artwork.
- 16.00 Excludes any Allowance for ESD Items.
- 17.00 Excludes any Allowance for removal from site of excavated materials.
- 18.00 Excludes any Specific Allowance for Stormwater Detention Features.
- 19.00 Excludes any Upgrades to Rooty Hill Road or Church Road; Including Enhancement of Lights/Crossings/Widenings etc., as may be required directly outside the proposed site boundary.
- 20.00 Excludes any Upgrades to Roads in the 'school precinct area' as may be required directly outside the proposed site boundary.

Assumptions & Notes.

- 1.00 It is assumed that HV Connection is available at the proposed site boundary.
- 2.00 It is assumed that Stormwater Connection is available at the proposed site boundary.
- 3.00 It is assumed that Sewer Connection is available at the proposed site boundary.
- 4.00 It is assumed that Gas Connection is available at the proposed site boundary.
- 5.00 It is assumed that Telecommunications Connection is available at the proposed site boundary.
- 6.00 It is assumed that all excavated materials are stockpiled on site for re-use (potentially as M7 Buffer).

Notes

- 1.00 The drawn information used as the basis of the above estimate contained highly indicative, preliminary information.
- 2.00 WTP would strongly suggest that further cost plans are compiled as design becomes more fully developed. Revised cost plans should be developed before the Western Sydney Parklands Trust enters into any binding agreement to continue with the proposed development.

DEMOLITIONS, ALTERATIONS & EARTHWORKS**DRAFT FOR DISCUSSION**

Ref	Element/Activity Description	Unit	Qty	Rate (\$)	TOTAL (\$)
DEMOLITION & ALTERATIONS					
1.00	Demolition				
1.01	Allowance to Break-Up, Demolish and Remove Existing Areas of Beggs Road.	m2	5886	\$6	\$35,316
1.02	Demolish and Remove Existing Dwelling at North of Site - Off Church Street.	Item	1	\$50,000	\$50,000
1.03	Allow for Protection of Dwellings to be Retained (to North of Site on Rooty Hill Road) throughout the duration of the works.	Item	1	\$50,000	\$50,000
1.04	Removal of Rubbish Dumped on the Site	Item	1	\$50,000	\$50,000
1.05	Allow for Protection of the Jemenna Trunk Receiving Station, All associated site Structures and Existing Gas Pipeline throughout the duration of the works.	Item	Included in Services Costs		Excl.
EARTHWORKS					
2.00	Earthworks				
2.01	Removal of Existing Trees/Shrubs etc.,. Mulch and Stockpile on site as directed. (Say).	Item	1	\$75,000	\$75,000
2.02	Clearing and Grubbing of Site - Assumed 40% of Total Site Area for purpose of estimating.	m2	137270	\$0.50	\$68,635
2.03	Stripping of Topsoil from all Construction Areas (assumed 40% of Total Site Area for purpose of estimating). 150mm average depth and stockpiling on site as directed.	m2	137270	\$1.50	\$205,904
2.04	Bulk Excavation to Reduce Levels. Assume average 750mm deep. Include for carting to Fill/Stockpile areas. Spreading, forming and compacting as directed. Assumed 40% of Total Site Area for purpose of estimating.	m3	102952	\$6	\$617,713
2.05	Prepare, Trim and Compact all excavated areas for subsequent development works. Assumed 40% of Total Site Area for purpose of estimating.	m2	137270	\$3.00	\$411,809
SUB-TOTAL - TO SUMMARY SHEET					\$ 1,594,266

STRUCTURES AND DEVELOPED AREAS

DRAFT FOR DISCUSSION							
Ref	Element/Activity Description	Unit	Site Area	No. Of Floors	GFA	Rate (\$)	TOTAL (\$)
STRUCTURES AND DEVELOPED AREAS							
The Following Items relate to areas shown on the Architectus Sketches and assume that all Demolition and Bulk Earthworks have been undertaken as a separate exercise (see separate cost sheet). The cost per/m2 is deemed to include for all Footings, Structure, Finishes and Fit-out to a mid-range level of finish. Preliminaries are also deemed to be included.							
1.00	Structure No. 4 - Outdoor Garden Retail						
1.01	Site Area as nominated on Architectus Sketch 'Indicative Development Outcome'.	m2	4220	1	4220	\$300	\$1,266,000
1.02	Footings/Substructure	m2	4220	N/A	N/A	Incl.	Incl.
1.03	Services	m2	4220	N/A	N/A	Incl.	Incl.
1.04	Fit-Out	m2	4220	N/A	N/A	Incl.	Incl.
1.03	Parking & Hardstanding/Loading Areas Associated with this Development Lot. Including Stormwater Drainage, Line-Marking, Directional Signage and Minimal Lighting with Some Landscaping.	m2	4581	1	4581	\$150	\$687,150
SUB-TOTAL							\$1,992,213
2.00	Structure No. 5 - Garden Centre						
2.01	Site Area as nominated on Architectus Sketch 'Indicative Development Outcome'.	m2	5195	1	5195	\$1,000	\$5,195,000
2.02	Footings/Substructure	m2	5195	N/A	N/A	Incl.	Incl.
2.03	Services	m2	5195	N/A	N/A	Incl.	Incl.
2.04	Fit-Out	m2	5195	N/A	N/A	Incl.	Incl.
2.03	Parking & Hardstanding/Loading Areas Associated with this Development Lot. Including Stormwater Drainage, Line-Marking, Directional Signage and Minimal Lighting with Some Landscaping.	m2	4581	1	4581	\$150	\$687,150
SUB-TOTAL							\$5,999,793
3.00	Structure No. 7 - Homemaker Centre						
3.01	Site Area as nominated on Architectus Sketch 'Indicative Development Outcome'.	m2	10500	1	10500	\$1,200	\$12,600,000
3.02	Footings/Substructure	m2	10500	N/A	N/A	Incl.	Incl.
3.03	Services	m2	10500	N/A	N/A	Incl.	Incl.
3.04	Fit-Out	m2	10500	N/A	N/A	Incl.	Incl.
3.03	Parking & Hardstanding/Loading Areas Associated with this Development Lot. Including Stormwater Drainage, Line-Marking, Directional Signage and Minimal Lighting with Some Landscaping.	m2	4328	1	4328	\$150	\$649,200
SUB-TOTAL							\$13,514,184
4.00	Structure No. 8 - Retail						
4.01	Site Area as nominated on Architectus Sketch 'Indicative Development Outcome'.	m2	7381	1	7381	\$1,600	\$11,809,600
4.02	Footings/Substructure	m2	7381	N/A	N/A	Incl.	Incl.
4.03	Services	m2	7381	N/A	N/A	Incl.	Incl.
4.04	Fit-Out	m2	7381	N/A	N/A	Incl.	Incl.
4.03	Parking & Hardstanding/Loading Areas Associated with this Development Lot. Including Stormwater Drainage, Line-Marking, Directional Signage and Minimal Lighting with Some Landscaping.	m2	4328	1	4328	\$150	\$649,200
SUB-TOTAL							\$12,707,976
5.00	Structure No. 9 - Bulky Liquor Outlet						
5.01	Site Area as nominated on Architectus Sketch 'Indicative Development Outcome'.	m2	2450	1	2450	\$1,200	\$2,940,000
5.02	Footings/Substructure	m2	2450	N/A	N/A	Incl.	Incl.
5.03	Services	m2	2450	N/A	N/A	Incl.	Incl.
5.04	Fit-Out	m2	2450	N/A	N/A	Incl.	Incl.
5.03	Parking & Hardstanding/Loading Areas Associated with this Development Lot. Including Stormwater Drainage, Line-Marking, Directional Signage and Minimal Lighting with Some Landscaping.	m2	4328	1	4328	\$150	\$649,200
SUB-TOTAL							\$3,660,984
6.00	Structure No. 10 - Bulk Office Supplies						
6.01	Site Area as nominated on Architectus Sketch 'Indicative Development Outcome'.	m2	8000	1	8000	\$1,200	\$9,600,000
6.02	Footings/Substructure	m2	8000	N/A	N/A	Incl.	Incl.
6.03	Services	m2	8000	N/A	N/A	Incl.	Incl.
6.04	Fit-Out	m2	8000	N/A	N/A	Incl.	Incl.
6.03	Parking & Hardstanding/Loading Areas Associated with this Development Lot. Including Stormwater Drainage, Line-Marking, Directional Signage and Minimal Lighting with Some Landscaping.	m2	4581	1	4581	\$150	\$687,150
SUB-TOTAL							\$10,492,893
7.00	Structure No. 11 - Self Storage						
7.01	Site Area as nominated on Architectus Sketch 'Indicative Development Outcome'.	m2	5994	1	5994	\$800	\$4,795,200
7.02	Footings/Substructure	m2	5994	N/A	N/A	Incl.	Incl.
7.03	Services	m2	5994	N/A	N/A	Incl.	Incl.
7.04	Fit-Out	m2	5994	N/A	N/A	Incl.	Incl.
7.03	Parking & Hardstanding/Loading Areas Associated with this Development Lot. Including Stormwater Drainage, Line-Marking, Directional Signage and Minimal Lighting with Some Landscaping.	m2	4328	1	4328	\$150	\$649,200
SUB-TOTAL							\$5,553,288

STRUCTURES AND DEVELOPED AREAS

DRAFT FOR DISCUSSION							
Ref	Element/Activity Description	Unit	Site Area	No. Of Floors	GFA	Rate (\$)	TOTAL (\$)
8.00	Structure No. 13 - Indoor Activity Centre						
8.01	Site Area as nominated on Architectus Sketch 'Indicative Development Outcome'.	m2	2600	1	2600	\$1,400	\$3,640,000
8.02	Footings/Substructure	m2	2600	N/A	N/A	Incl.	Incl.
8.03	Services	m2	2600	N/A	N/A	Incl.	Incl.
8.04	Fit-Out	m2	2600	N/A	N/A	Incl.	Incl.
8.03	Parking & Hardstanding/Loading Areas Associated with this Development Lot. Including Stormwater Drainage, Line-Marking, Directional Signage and Minimal Lighting with Some Landscaping.	m2	2354	1	2354	\$150	\$353,100
SUB-TOTAL							\$4,072,962
8.00	Structure No. 15 - Hotel						
8.01	Site Area as nominated on Architectus Sketch 'Indicative Development Outcome'. Standard Construction and Finishes, Part Air-Conditioned; Excluding Loose Furniture.	m2	2061	4	8244	\$2,400	\$19,785,600
8.02	Footings/Substructure	m2	2061	N/A	N/A	Incl.	Incl.
8.03	Services	m2	2061	N/A	N/A	Incl.	Incl.
8.04	Fit-Out	m2	2061	N/A	N/A	Incl.	Incl.
8.03	Parking & Hardstanding/Loading Areas Associated with this Development Lot. Including Stormwater Drainage, Line-Marking, Directional Signage and Minimal Lighting with Some Landscaping.	m2	4880	1	4880	\$150	\$732,000
SUB-TOTAL							\$20,927,952
SUB-TOTAL - TO SUMMARY SHEET							\$ 78,922,245

SOFT LANDSCAPING AND PUBLIC AREAS**DRAFT FOR DISCUSSION**

Ref	Element/Activity Description	Unit	Qty	Rate (\$)	TOTAL (\$)
SOFT LANDSCAPING & PUBLIC AREAS					
The Following Items relate to areas shown on the Architectus Sketches. For the purpose of estimating it is assumed that much of the M7 Buffer area is to be made up of fill from excavated areas. It is assumed that all soft landscaped areas are to be treated in some way (ie at least seeded).					
1.00	General Soft Landscaping Areas				
1.01	Allowance for Structural Fill Forming Embankments etc.,	m2	Excl.	Excl.	Excl.
1.02	Imported Topsoil for Planting.	m2	Excl.	Excl.	Excl.
1.03	Turf.	m2	Excl.	Excl.	Excl.
1.04	Allowance for Irrigation.	m2	Excl.	Excl.	Excl.
1.05	Seeding to Previously prepared areas; assumed to be areas formed following carting of previously excavated materials to new areas within the site boundary.	m2	195151	\$0.40	\$78,060
1.06	Tubestock Planting. (Say 10% of Seeded Area).	m2	19515	\$5	\$97,576
1.07	Street Lighting. (Say 5% of Seeded Area).	m2	9758	\$20	\$195,151
2.00	Area 14 - All Abilities Play Area				
2.01	Allowance for Structural Fill Forming Embankments etc.,	m2	Excl.	Excl.	Excl.
2.02	Imported Topsoil for Planting.	m2	Excl.	Excl.	Excl.
2.03	Allowance for Irrigation.	m2	Excl.	Excl.	Excl.
2.04	Turf to Previously prepared areas.	m2	38779	\$12.00	\$465,348
2.05	Tubestock Planting. (Say 10% of All Abilities Play Area).	m2	3878	\$5	\$19,390
2.06	Street Lighting. (Say 5% of All Abilities Area).	m2	1939	\$20	\$38,779
2.07	Allowance for 'All Abilities' Play Equipment; Including Soft Fall Floor Covering.	Item	1	\$150,000	\$150,000
SUB-TOTAL - TO SUMMARY SHEET					\$ 1,065,189

Eastern Creek Business Hub

Broad Order of Cost Estimate - Possible Development Costs

Rev 04

INFRASTRUCTURE AND SERVICES

DRAFT FOR DISCUSSION					
Ref	Element/Activity Description	Unit	Qty	Rate (\$)	TOTAL (\$)
INFRASTRUCTURE AND SERVICES					
1.00	Roads - Re-Instated Beggs Road				
1.01	Allow for new road construction to RTA spec including 200mm select material zone, primer seal, 150mm thick 5Mpa base, curing and debonding layer, 50mm AC; Rate to include for Kerb/Gutter.	m2	5886	\$140	\$824,040
1.02	Allowance for Compaction Testing.	Item	1	\$20,000	\$20,000
1.03	Allowance for Road Marking.	m2	5886	\$5	\$29,430
1.04	Allowance for General Street Lighting.	m2	5886	\$20	\$117,720
1.05	Extra Over Road Construction for Bus Laybys/Set-Downs.	No	Excl.	Excl.	Excl.
1.06	Extra Over Road Construction for Pram Ramps and Dropped Kerbs.	No	Excl.	Excl.	Excl.
1.07	Traffic Control/Lights or Pedestrian Crossings.	No	Excl.	Excl.	Excl.
1.08	Median Strips	No	Excl.	Excl.	Excl.
1.09	General Street Signage	m2	5886	\$5	\$29,430
1.10	Trees & Tree Pits	No	Excl.	Excl.	Excl.
1.11	Tie Into Existing Road Finishes	No	1	\$10,000	\$10,000
2.00	Roads - North/South Road with Entries on Church Street and Rooty Hill Road				
2.01	Allow for new road construction to RTA spec including 200mm select material zone, primer seal, 150mm thick 5Mpa base, curing and debonding layer, 50mm AC; Rate to include for Kerb/Gutter.	m2	10727	\$140	\$1,501,780
2.02	Allowance for Compaction Testing.	Item	1	\$20,000	\$20,000
2.03	Allowance for Road Marking.	m2	10727	\$5	\$53,635
2.04	Allowance for General Street Lighting.	m2	10727	\$20	\$214,540
2.05	Extra Over Road Construction for Bus Laybys/Set-Downs.	No	Excl.	Excl.	Excl.
2.06	Extra Over Road Construction for Pram Ramps and Dropped Kerbs.	No	Excl.	Excl.	Excl.
2.07	Traffic Control/Lights or Pedestrian Crossings.	No	Excl.	Excl.	Excl.
2.08	Median Strips	No	Excl.	Excl.	Excl.
2.09	General Street Signage	m2	10727	\$5	\$53,635
2.10	Trees & Tree Pits	No	Excl.	Excl.	Excl.
2.11	Tie Into Existing Road Finishes	No	2	\$10,000	\$20,000
3.00	Roads - Belmore Street Road Reserve				
3.01	Allow for new road construction to RTA spec including 200mm select material zone, primer seal, 150mm thick 5Mpa base, curing and debonding layer, 50mm AC; Rate to include for Kerb/Gutter.	m2	29347	\$140	Excl.
3.02	Allowance for Compaction Testing.	Item	1	\$20,000	Excl.
3.03	Allowance for Road Marking.	m2	29347	\$5	Excl.
3.04	Allowance for General Street Lighting.	m2	29347	\$20	Excl.
3.05	Extra Over Road Construction for Bus Laybys/Set-Downs.	No	Excl.	Excl.	Excl.
3.06	Extra Over Road Construction for Pram Ramps and Dropped Kerbs.	No	Excl.	Excl.	Excl.
3.07	Traffic Control/Lights or Pedestrian Crossings.	No	Excl.	Excl.	Excl.
3.08	Median Strips	No	Excl.	Excl.	Excl.
3.09	General Street Signage	m2	29347	\$5	Excl.
3.10	Trees & Tree Pits	No	Excl.	Excl.	Excl.
3.11	Tie Into Existing Road Finishes	No	0	\$10,000	Excl.
4.00	Entry Signage				
4.01	Allow for Entry Signage at 2 locations along Rooty Hill Road. To include Stone/Steel Structure 'entry statement' with Development Signage.	No.	2	\$10,000	\$20,000
5.00	Services - Works to Connect to Existing Services				
5.01	GAS - Allow for Protection of the Jemenna Trunk Receiving Station, All associated site Structures and Existing Gas Pipeline throughout the duration of the works.	Item	1	\$200,000	\$200,000
5.02	GAS - Allowance to connect to existing services. [Reticulation of new pipework to proposed development is included in Section 6 - below].	Item	1	\$200,000	\$200,000
5.03	TELECOMMS - Allowance to connect to existing services. [Reticulation of new cabling/conduit to proposed development is included in Section 6 - below].	Item	1	\$200,000	\$200,000
5.04	POTABLE WATER - Allowance to connect to existing services. [Reticulation of new pipework to proposed development is included in Section 6 - below].	Item	1	\$200,000	\$200,000
5.05	STORMWATER - Allow for all temporary works associated with the diversion of the existing on-site open stormwater channel as necessary during construction. Include for all pumping, temporary trenching, protection and integration with new stormwater systems as they become available.	Item	1	\$75,000	\$75,000
5.06	STORMWATER; NORTHERN ZONE - Allow for construction of detention basin including reducing levels, provision of filter media, planting and fencing. [Reticulation of new pipework to proposed development is included in Section 6 - below].	Item	1	\$400,000	\$400,000
5.07	STORMWATER; SOUTHERN ZONE - Allow for remedial works to existing pits in the location of Rooty Hill Road and Cable Place. Additionally allow for works to upgrade the existing culvert under the M7. [Reticulation of new pipework to proposed development is included in Section 6 - below].	Item	1	\$200,000	\$200,000

INFRASTRUCTURE AND SERVICES**DRAFT FOR DISCUSSION**

Ref	Element/Activity Description	Unit	Qty	Rate (\$)	TOTAL (\$)
5.08	SEWER - Allow for connection to existing main to the East of the M7 on the Western Side of the existing Gas Main. Including approx.; Pipework. Say \$1000m @ \$130/m Pumping Station @ \$150k Underboring M7. Say 150m @ \$2,000/m [Reticulation of new pipework to proposed development is included in Section 6 - below].	Item	1	\$600,000	\$600,000
5.09	ELECTRICAL; SOUTHERN ZONE - Allow for provision of 11 Kv Main from future Doonside zone sub. Say 3km @ \$1,000/m. [Reticulation of new pipework to proposed development is included in Section 6 - below].	Item	1	\$3,000,000	\$3,000,000
6.00	Services - New				
6.01	Excavation of Pipework/Cable Trenches	m	20000	\$40	\$800,000
6.02	Sewer Mains	m	2000	\$130	\$260,000
6.03	Manholes/Inspections	No	20	\$3,500	\$70,000
6.04	Potable Water Mains	m	2000	\$150	\$300,000
6.05	Manholes/Inspections	No	20	\$3,500	\$70,000
6.06	Subsoil Drainage Mains	m	2000	\$130	\$260,000
6.07	Manholes/Inspections/Flushing Points	No	20	\$3,500	\$70,000
6.08	Electricity Cabling - HV	m	2000	\$300	\$600,000
6.09	Inspection Pits/Access Points (Energy)	No	20	\$3,500	\$70,000
6.10	Telstra Cabling	m	2000	\$60	\$120,000
6.11	Inspection Pits/Access Points (Telstra)	No	20	\$3,500	\$70,000
6.12	Gas Mains	m	2000	\$120	\$240,000
6.13	Inspection Pits/Access Points (Gas)	No	20	\$3,500	\$70,000
6.14	Other Telecomms Providers	m	2000	\$60	\$120,000
6.15	Inspection Pits/Access Points (non-Telstra)	No	20	\$3,500	\$70,000
6.16	Conduits In Footpaths	m	4000	\$60	\$240,000
6.17	Stormwater Mains; 675mm dia.	m	2000	\$250	\$500,000
6.18	Stormwater Mains; Inspection Pits	No	20	\$3,500	\$70,000
6.19	Extra Over HV Cabling for Pits in Location of Future Developments for Connection to HV Main by Individual Developer. (Say).	No.	20	\$5,000	\$100,000
6.20	Utility/Authority Design Fees, Connections, Protection, Setting, Testing and Commissioning	Item	1	Excl.	Excl.
6.21	Allow for Capped 'Stubs' for all Services in location of each proposed Development Frontage. For future connection. (Say).	No	140	\$500	\$70,000
6.22	Allowance for Gross Pollutant Traps.	No.	1	\$30,000	\$30,000
8.00	Kiosks/Sub-Stations to Development Lots				
8.01	New HV Kiosks. As required to service Infrastructure & Public Areas.	No.	2	\$85,000	\$170,000
SUB-TOTAL - TO SUMMARY SHEET					\$ 12,359,210



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**Western Sydney Parklands Eastern Creek Business Hub
Request for Director General Requirements**

Appendix D

**Preliminary Ecology and Bushfire Assessment
Prepared by Eco Logical Australia**



Preliminary Environmental Assessment – Ecology and Bushfire

Summary for Eastern Creek Business Hub

PREPARED FOR **Western Sydney Parklands Trust**

PROJECT NO **09SYDPLA-0034 and 11SYDPLA-0029**

DATE **28 October 2011**

DOCUMENT TRACKING

ITEM	DETAIL
Project Name	Preliminary Environmental Assessment – Ecology and Bushfire, Eastern Creek Business Hub
Project Number	09SYDPLA-0034 and 11SYDPLA-0029
File location	G:\Synergy\Projects\09SYDPLA\09SYDPLA-0034 Western Sydney Parklands Eastern Creek Business Hub Ecological Assessment\Report\Draft Reports\PEA Summary
Prepared by	Robyn Johnson, Luke Geelan, Alastair Patton, Steve Dimitriadis
Approved by	Mark Adams
Status	Summary
Version Number	5
Last saved on	28 October 2011

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Introduction

Eco Logical Australia Pty Ltd was commissioned by the Western Sydney Parklands Trust Pty Ltd (WSPT) to undertake an ecological and bushfire constraints assessment of the Eastern Creek Business Hub within Precinct 3 of the Western Sydney Parklands (WSP). WSPT is preparing a Concept Plan for the study area, which proposes the development of approximately 10 ha for mixed income generating and recreational uses.

The Concept Plan was previously being prepared under Part 3A of the *Environmental Planning and Assessment Act 1979* (EP&A Act); however this part was repealed by the *Environmental Planning and Assessment Amendment (Part 3A Repeal) Act 2011*, which commenced on 1 October 2011. This summary report was initiated in September 2009 and amended in October 2011 as part of Preliminary Environmental Assessment (PEA) for the study area.

This report aims to inform the concept planning process by detailing both potential ecological and bushfire issues that will need to be investigated and resolved as part of the Environmental Assessment process.

A preliminary ecological field survey of the study area was conducted on 29 July 2009. The purpose of the field survey was to undertake vegetation community and condition assessment, target searches for Cumberland Plain Land Snail and fauna habitat assessment. Ecological constraints of the vegetation within the study area were assessed using vegetation condition, recovery potential and connectivity to other vegetation.

A bushfire field survey was undertaken on 11 August 2009 to assess bushfire threats relating to vegetation within and surrounding the study area and to assess slope characteristics.

On 25 November 2009, further targeted searches to determine the presence of the threatened Cumberland Plain Land Snail (*Meridolum corneovirens*), threatened flora species including *Grevillea juniperina subsp. juniperina* (Juniper-leaf Grevillea) and *Pimelea spicata* (Spiked rice flower) and opportunistic sightings of bird species were undertaken.

Diurnal and nocturnal surveys were also carried out on 4 December 2009, for the endangered Green and Golden Bell Frog (*Litoria aurea*) (GGBF) along with further opportunistic sightings of bird species.

CHANGES IN STATUS

It is noted that the field surveys were completed prior to the up listing of 'Shale Plains Woodland', a sub-community of 'Cumberland Plain Shale Woodlands and Shale-Gravel Transition Forest' to a critically endangered ecological community under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and the up listing of 'Cumberland Plain Woodland in the Sydney Basin Bioregion' to a critically endangered ecological community under the NSW *Threatened Species and Conservation Act 1995* (TSC Act).

The new EPBC Act criteria for assessment are attached in **Appendix A**. This new criteria has not been applied to the site. The ramifications of the up listing will be examined in detail during the Environmental Assessment.

It is noted that the NSW Scientific Committee (2009) *Cumberland Plain Woodland in the Sydney Basin Bioregion – Final Determination* does not provide assessment criteria for the up listing.

Legislative Requirements

The following table provides an overview of relevant legislative requirements in relation ecological and bushfire aspects of the proposal.

Table 1: Summary of Legislative Requirements.

ISSUE	PLANNING INSTRUMENT	REQUIREMENTS
Commonwealth matters of national environmental significance ¹	<i>Environment Protection & Biodiversity Conservation Act 1999</i> (EPBC Act)	<p>An assessment of significance in accordance with the Commonwealth <i>EPBC Act Policy Statement 1.1 – Significant Impact Guidelines – Matters of National Environmental Significance</i> (Department of Environment, Water, Heritage and the Arts - DEWHA 2009) would need to be completed as part of the Environmental Assessment to determine whether the development would have a significant impact on the critically endangered ecological community ('Cumberland Plain Shale Woodlands and Shale-Gravel Transition Forest') and threatened fauna species listed in this report.</p> <p>The assessment criteria for field survey in Appendix A would need to be adhered to during the Environmental Assessment process. This should include consistency with SEWPAC policy on Cumberland Plain Shale Woodlands and Shale-Gravel Transition Forest (Policy Statement 3.31). This policy contains guidance on correctly identifying the community, condition thresholds and other considerations to assist with assessment.</p>
NSW Legislation	<i>Environmental Planning and Assessment Act 1979</i>	<p>The proposed development is State Significant Development under Part 4.1 of the EP&A Act. A Staged Development Application (DA) for a Concept Proposal (Site Layout, Street Network and Building Envelopes); and Subdivision/Early Works is to be lodged. In determining a development application under Part 4.1, the consent authority is to take into consideration the matters identified in Section 79C that are of relevance to the development. In the administration of section 79C, the consent authority must determine whether there is likely to be a significant effect on threatened species, populations or ecological communities or their habitats (the 7 part test). This assessment of significance is undertaken in relation to species, communities, habitat and processes listed under either the TSC Act or the <i>Fisheries Management Act 1994</i> (FM Act) and prepared in accordance with <i>DECC Assessment of Significance Guidelines</i> (2007). These would be prepared at the Environmental Assessment Report Stage.</p>

¹ Note change is status and new assessment criteria outlined in **Appendix A**.

ISSUE	PLANNING INSTRUMENT	REQUIREMENTS
NSW Legislation	<i>State Environmental Planning Policy (Western Sydney Parklands) 2009</i>	<p>The State Environmental Planning Policy (Western Sydney Parklands) provides the statutory planning framework for the Trust and its partners to develop and manage the Parklands.</p> <p>The local planning instrument (Blacktown LEP) does not apply to development within the study area.</p>
	<i>Threatened Species Conservation Act 1995 (TSC Act)</i>	<p>The TSC Act provides a list of threatened species, endangered populations and endangered ecological communities that are to be considered when a consent authority determines a development application under the TSC Act. Of particular relevance to the Western Sydney Parklands are:</p> <ul style="list-style-type: none"> • Critically Endangered Ecological Community ('Cumberland Plain Woodland in the Sydney Basin Bioregion'); • Key threatening process – clearing of native vegetation; • Threatened fauna species listed in this report. <p>NSW DECCW (OEH) has also prepared an approved recovery plan document that aims to provide for the long-term survival and protection of seven threatened species, four endangered populations and nine threatened ecological communities listed in the TSC Act that are found only on the Cumberland Plain (DECCW, 2010). Environmental assessment will need to make reference to and be consistent with this document.</p>
	<i>Water Management Act 2000</i>	<p>A drainage line occurs on site conveying stormwater from the urbanised catchment through the site to a culvert that passes under the M7. It appears this drainage line has been previously constructed and is now supporting regrowth.</p> <p>Approval is typically required under Section 91E(1) of the Act if a controlled activity is proposed within 40m of waterfront land. However public authorities such as the WSPT are exempt from this approval requirement under Section 38 of the <i>Water Management (General) Regulation 2011</i>.</p> <p>DWE (now the Office of Water as part of the Department of Trade and Investment, Regional Infrastructure and Services) best practice guidelines in relation to riparian corridors and water sensitive urban design principles remain relevant planning considerations. These guidelines include the provision of a 10m vegetated Core Riparian Zone (CRZ) and design principles for crossings.</p>
	<i>Noxious Weeds Act 1993</i>	<p>Eight noxious weed species were identified during field survey within the study area, and hence noxious weed control will be required in the study area. Further details will be provided as part of the Environmental Assessment.</p>

ISSUE	PLANNING INSTRUMENT	REQUIREMENTS
NSW Legislation	<i>Western Sydney Parklands Act 2006</i>	This legislation sets up the framework for the establishment and maintenance of an ecological network of wildlife and habitat corridors within the Western Sydney Parklands and its surrounds.
	<i>Rural Fires Act 1997</i>	<p>Section 89J of the EP&A Act states that a bush fire safety authority under section 100B of the <i>Rural Fires Act 1997</i> (RF Act), is not required for State Significant Development.</p> <p>However, the DGR's will most likely contain requirements to address bushfire management if the minister chooses to seek advice from the Commissioner of the RFS. It is likely the Minister will chose to do so.</p> <p>In the case of staged development and the circumstances described in Section 89D of the EP&A Act (see above), statutory requirements under the RF Act would apply.</p>

Literature and Data Review

The following table provides an overview of relevant literature and data in relation to the study area and the findings of preliminary field survey.

Table 2: Summary of Relevant Literature and Data

ISSUE	RELEVANT LITERATURE	REQUIREMENTS
Management Vision	<i>Western Sydney Parklands Management Vision</i> (DIPNR 2004)	<p><u>Core Habitat:</u> The Northern boundary of the study area has been identified as Core Habitat together with the remnant vegetation patch of the Northern side of Church Street. Based on our field surveys, only the vegetation patch in the North-east of the study area (rather than the entire Northern boundary) could be considered Core Habitat, as the scattered trees along the remainder of the Northern boundary are unlikely to meet the definition of Core Habitat.</p> <p><u>Habitat Corridor:</u> There are no habitat corridors within the study area.</p> <p><u>Park Sub-Precinct:</u> The vegetation within the study area is described as ‘remnant vegetation within a sub-precinct’ and should be protected and enhanced, irrespective of patch size and proximity to other remnant vegetation.</p> <p><u>External Links:</u> There are no external links identified in the immediate vicinity of the study area.</p> <p><u>Management Objectives</u> for ecological sustainability and environmental quality will need to be observed during the Environmental Assessment. In particular, objectives relating to the drainage line to <i>manage and restore remnant vegetation within riparian zones and along drainage lines</i> and to <i>ensure creek and watercourses are based on natural systems</i>.</p>
	<i>Management Plan 2010 - 2020</i>	<p>The <i>Western Sydney Parklands Management Plan</i> has been prepared under Part 4 of the <i>Western Sydney Parklands Act 2006</i>. The Management Plan sets out the vision for the Western Sydney Parklands and provides a road map to guide the future priorities over the next 10 years (WSPMP, 2011).</p> <p>The Key Management Priorities for Environment and Conservation under the plan include allowing for biodiversity links to the wider Parklands bushland corridor.</p> <p>The management plan also acknowledges the actions developed under the <i>Western Sydney Parklands Biodiversity Restoration Strategy</i> (see below).</p> <p>As part of the Environmental Assessment the proposed development will need to be assessed against the management plan and the</p>

ISSUE	RELEVANT LITERATURE	REQUIREMENTS
		relevant precinct plan (The Eastern Creek Business Hub lies within <i>Precinct 3: Rooty Hill Precinct</i>).
Biodiversity	<i>Western Sydney Parklands Biodiversity Restoration Strategy</i> (Eco Logical Australia 2008a)	The Northern portion of the site has been identified as a 'Priority 8', which are areas are categorised by Core Habitat, moderate or low conservation significance, and poor field condition. Primary and secondary weed control and revegetation for this area is recommended, subject to funding. No threat abatement works have been proposed within the study area.
Vegetation mapping	<i>NSW Vegetation Mapping</i> (NPWS 2002 & 2009 Update)	Database and mapping searches identified 'Shale Plains Woodland' (SPW) as previously mapped on site.
Threatened species	NSW Wildlife Atlas	No threatened flora or fauna species have previously been recorded on site.

Preliminary Ecological Issues

VEGETATION COMMUNITIES

The majority of the study area has been cleared with approximately 75% of the study area being modified grassland, dominated by exotic species. Within the remainder of the study area, 'Shale Plains Woodland' (SPW) was the predominant vegetation community identified. The following table provides a summary of the ecological values of each remnant patch of woodland.

Table 3: Remnant woodland condition

VEGETATION PATCH	AREA (ha)	CONSERVATION SIGNIFICANCE	RECOVERY POTENTIAL	ECOLOGICAL CONSTRAINT
North-east (adjacent Church Street)	1.46	Core	Moderate	High
South	4.61	Support for Core		
North-east (adjacent Beggs Road)	1.16	Other Remnant Vegetation	Low	Moderate
North-west	1.12			

Indicative development options could potentially result in the clearing of SPW within the Southern and North-west remnants on site. SPW is a sub-community of the:

- 'Cumberland Plain Woodland in the Sydney Basin Bioregion' (CPW), which is listed as a critically endangered ecological community under the NSW TSC Act; and

- 'Cumberland Plain Shale Woodlands and Shale-Gravel Transition Forest', which is listed as a critically endangered ecological community under the Commonwealth EPBC Act.

Within the NSW legislative framework, the clearing of native vegetation within the study area will require assessment in accordance with State Significant Development Assessment, Part 4 Assessment process under the EP&A Act (See **Table 1**) and the provisions of the TSC Act. The NSW Scientific Committee made a final determination to up-list CPW as a critically endangered ecological community in March 2010. Consultation with DECCW is likely to be required for the proposed clearing of CPW, including determination of whether changes to assessment methodology for CPW are proposed.

Within the Commonwealth legislative framework, the clearing of native vegetation within the study area will require further assessment (as part of the Environmental Assessment) in accordance with the significant impact criteria listed in the *EPBC Act Policy Statement 1.1* and the provisions of the EPBC Act. The vegetation surveys for the PEA were undertaken using a random meander methodology. Whilst this methodology was appropriate for the assessment undertaken at the time, it does not meet the requirements of condition assessment under the new EPBC listing advice and condition thresholds (not made publically until December 2009). This methodology is described briefly in **Attachment A**.

Clearing of SPW is likely to require offsetting and an appropriate approach would need to be developed as part of the Environmental Assessment.

THREATENED FLORA

No threatened flora species were observed within the study area at the time of the field survey. On 25 November 2009 a targeted flora survey was undertaken to determine the presence of threatened flora species across the site, in particular *Grevillea juniperina subsp. juniperina* (Juniper-leaf Grevillea) and *Pimelea spicata* (Spiked rice flower). These species are listed as Vulnerable under the TSC Act.

Potential habitat occurs on site for the Juniper-leaf Grevillea within the woodland areas and grassland areas on the fringe of the woodlands, however no individuals were identified during the targeted site survey. When considered in the context of other significant populations of the species within Western Sydney, even if isolated individuals did re-occur or re-establish on site prior to development, the species presence would be unlikely to trigger a significant threshold to prohibit the proposed development, as it would be expected to occur in very low numbers.

No Spiked rice flower individuals were identified during the targeted site survey conducted during optimal seasonal conditions. Potential habitat on site for the species is limited and only occurs on the fringe of the woodlands. The dense grassland areas on site, which are dominated by aggressive introduced species, are considered unlikely to be important habitat for the species. Given there are currently no species on site and the scale of impacts within the site on potential habitat is minimal, the proposed works are not considered to pose a significant threat to Spiked Rice-flower survival requirements. However, 7 part tests would still be required to be prepared as part of the Environmental Assessment (See Table 1).

THREATENED FAUNA

No threatened fauna species were observed within the study area at the time of the field survey. Threatened fauna species considered likely to or having the potential to occur within the study area, include:

- Green and Golden Bell Frog (*Litoria aurea*) – EPBC and TSC Act;
- Cumberland Plain Land Snail (*Meridolum corneovirens*) – TSC Act;
- Swift Parrot (*Lathamus discolor*) – EPBC and TSC Act;
- Rainbow Bee-eater (*Merops ornatus*) – EPBC and TSC Act;
- Satin Flycatcher (*Myiagra cyanoleuca*) – EPBC and TSC Act;
- Black-chinned Honeyeater (*Melithreptus gularis gularis*) – TSC Act;
- Barking Owl (*Ninox connivens*) – TSC Act;
- Powerful Owl (*Ninox strenua*) – TSC Act;
- Large-eared Pied Bat (*Chalinolobus dwyeri*) – EPBC and TSC Act;
- Grey-headed Flying Fox (*Pteropus poliocephalus*) – EPBC and TSC Act;
- Eastern Freetail-bat (*Mormopterus norfolkensis*) – TSC Act;
- Large-footed Myotis (*Myotis macropus*) – TSC Act;
- Yellow-bellied Sheath-tail-bat (*Saccolaimus flaviventris*) – TSC Act;
- Eastern False Pipistrelle (*Falsistrellus tasmaniensis*) – TSC Act;
- Eastern Bentwing-bat (*Miniopterus schreibersii oceanensis*) – TSC Act; and
- Greater Broad-nosed Bat (*Scoteanax rueppellii*) – TSC Act.

Further ecological studies would be required as part of the Environmental Assessment, to determine the impacts of development within the study area including a bat census undertaken over at least two consecutive nights. 7 part tests for these species would be required to be prepared as part of the Environmental Assessment (See Table 1).

Cumberland Plain Land Snail (*Meridolum corneovirens*)

On 25 November 2009 a targeted survey was undertaken to determine the presence of the threatened Cumberland Plain Land Snail (*Meridolum corneovirens*) across the site. No Cumberland Plain Land Snail individuals were identified during the site survey and habitat was not considered critical habitat due to low levels of leaf litter and the presence of the invasive shrub *Olea europaea* within areas of woodland. However, their presence cannot be ruled out, as potential habitat exists within the study area. A 7 part test for this species would be required to be prepared as part of the Environmental Assessment (See Table 1).

Bird Census

During surveys carried out on 29 July, 25 November and 4 December 2009, opportunistic sightings of bird species were recorded. No listed threatened species were recorded at the site. *Gallinago hardwickii* (Latham's Snipe) was tentatively recorded from the western section of the drainage line on 25 November 2009. During the survey on 4 December 2009, two individual Latham's Snipe were observed in the eastern portion of the drainage line confirming the presence of the species within the site. Latham's Snipe is listed as migratory species under the EPBC Act. The site is not considered important habitat for this species due to low water flow within the drainage on site, sighting of only two individuals, weed infestation and urban disturbance. As the species is highly mobile it is likely to use a range of suitable habitat available within the surrounding landscape, i.e. nearby Eastern Creek and its drainage lines. The proposed works are considered unlikely to sustainably modify, destroy, isolate or result in invasion of exotic species into an area of important habitat for the species. As such, a referral to the Commonwealth regarding impacts on the Latham's Snipe is not considered necessary,

however an assessment against Department of Sustainability, Environment, Water, Population and Communities (SEWPAC) *Significant Impact Guidelines* is required for EPBC Act listed species and should be prepared as part of the Environmental Assessment.

It is recommended that wetland areas in the vicinity of the drainage line, east of the gas main, be rehabilitated to allow potential habitat for the species to remain on site.

Green and Golden Bell Frog (*Litoria aurea*)

On 4th December 2009 a diurnal and nocturnal survey was undertaken to assess habitats available for the endangered Green and Golden Bell Frog (*Litoria aurea*) (GGBF) within the site. No GGBF were detected during the targeted surveys of the subject land and surrounding areas. Key areas of potential habitat were located within the following features on site: main drainage line; ephemeral drainage depressions; bunded areas receiving overland flows; sediment basins; stormwater structures, and piles of debris. The non detection of the GGBF during the targeted survey effort does not enable a conclusion that the species is absent from the site. GGBF could still be present in low numbers, or could otherwise transiently or periodically occupy habitat at the site during migrations from other areas in the catchment from time to time. It is recommended that the retained riparian areas and rehabilitated wetland areas include designs that incorporate *The Best Practice GGBF Habitat Guide* (DECC 2008b) practices. A 7 part test for this species would be required to be prepared as part of the Environmental Assessment (See Table 1).

DRAINAGE LINE

A drainage line runs through the southern portion of SPW within the study area. It drains the urbanised catchment in an easterly direction toward a culvert under the M7 and then onto Eastern Creek.

On 25 November 2009 a survey of the vegetation within the drainage line and within 5 m of the top of bank was undertaken, to identify any potential threatened species occurring in this locality. Many of the species are weeds and none of the native species are listed as threatened species under the *TSC* or *EPBC Acts*.

The drainage channel has been previously straightened, presumably during earlier development higher in the catchment, resulting in the geomorphic structure of any natural watercourse being destroyed. The Concept Plan and Environmental Assessment will need to consider the status of the drainage channel under the *Water Management Act 2000* and improving the water quality impacts on downstream receiving waters through the application of water sensitive urban design to mimic natural hydrological flow patterns.

BUSHFIRE

Bushfire hazard has been assessed across the study area and found to be 'low', based on the gentle slopes and low fuel accumulation of the vegetation currently present. A number of strategies have been recommended below, such that the risk from bushfire can be minimised and further that the approvals process under the SSD process in the EP&A Act can be streamlined:

- Ensure adequate setback from bushfire prone vegetation that is to be retained;
- Integrate non combustible infrastructure within Asset Protection Zones (APZs) i.e. roads, easements and parking;
- Ensure adequate access and egress from the study area;
- Consider the adequacy of water supply and the delivery of other services (gas and electricity);

- Provide temporary APZs during any staged development; and
- Consider the requirements of ongoing APZ maintenance.

DOPI may refer the bushfire issues on site to the RFS. It is important to note that under Part 4 of the EP&A Act, Section 89D (See Table 1) the Minister may determine that a subsequent stage of the development is to be determined by the relevant council. Furthermore the development may cease to be State Significant Development and Council may become the consent authority for that stage of the development instead of the Minister. In this case, statutory requirements under the RF Act would apply.

Further bushfire advice and input into the planning process can be provided when development footprints are determined. Formalised bushfire assessments are recommended to facilitate adequate management of bushfire risks.

These preliminary ecological and bushfire constraints are mapped in **Figure 1**, overleaf.



Figure 1: Preliminary ecological and bushfire constraints

Appendix A – Commonwealth ‘Cumberland Plain Shale Woodlands and Shale Gravel Transition Forest’ Condition Criteria

The condition assessment criteria under the EPBC Act differs from that of the TSC Act. Condition is assigned based on patch size and perennial understorey cover. The table below outlines the EPBC Act condition criteria which were applied to vegetation within the study area to determine the condition code.

Table 4: Condition Thresholds for Patches³ that meet the Description for the Cumberland Plain Shale Woodlands and Shale-Gravel Transition Forest ecological community.

CATEGORY AND RATIONALE	THRESHOLDS
A. Core thresholds that apply under most circumstances: patches with an understorey dominated by natives and a minimum size that is functional and consistent with the minimum mapping unit size applied in NSW.	Minimum patch ³ size is ≥ 0.5 ha; AND $\geq 50\%$ of the perennial understorey vegetation cover ⁴ is made up of native species.
OR	
B. Larger patches which are inherently valuable due to their rarity.	The patch size is ≥ 5 ha; AND $\geq 30\%$ of the perennial understorey vegetation cover is made up of native species.
OR	
C. Patches with connectivity to other large native vegetation remnants in the landscape.	The patch size is ≥ 0.5 ha; AND $\geq 30\%$ of the perennial understorey vegetation cover is made up of native species; AND The patch is contiguous ⁵ with a native vegetation remnant (any native vegetation where cover in each layer present is dominated by native species) that is ≥ 5 ha in area.
OR	
D. Patches that have large mature trees or trees with hollows (habitat) that are very scarce on the Cumberland Plain.	The patch size is ≥ 0.5 ha in size; AND $\geq 30\%$ of the perennial understorey vegetation cover is made up of native species; AND The patch has at least one tree with hollows per hectare or at least one large tree (≥ 80 cm dbh) per hectare from the upper tree layer species outlined in the Description and Appendix A.
<p>3. A patch is defined as a discrete and continuous area that comprises the ecological community, outlined in the Description. Patches should be assessed at a scale of 0.04 ha or equivalent (e.g. 20m x 20m plot). The number of plots (or quadrats or survey transects) per patch must take into consideration the size, shape and condition across the site. Permanent man-made structures, such as roads and buildings, are typically excluded from a patch but a patch may include small-scale disturbances, such as tracks or breaks or other small-scale variations in native vegetation that do not significantly alter the overall functionality of the ecological community, for instance the easy movement of wildlife or dispersal of spores, seeds and other plant propagules.</p> <p>4. Perennial understorey vegetation cover includes vascular plant species of the ground and shrub layers (as outlined in the Description and Appendix A) with a life-cycle of more than two growing seasons (Australian Biological Resources Study, 2007). Measurements of perennial understorey vegetation cover exclude annuals, cryptogams, leaf litter or exposed soil (although these are included in a patch of the ecological community when they do not alter functionality as per footnote³ and the Description and Condition Thresholds are met).</p> <p>5. Contiguous means the woodland patch is continuous with, or in close proximity (within 100 m), of another patch of vegetation that is dominated by native species in each vegetation layer present.</p>	

Source: DEWHA (2009a) *Advice to the Minister for the Environment, Heritage and the Arts from the Threatened Species Scientific Committee (the Committee) on an Amendment to the List of Threatened Ecological Communities under the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act).*

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Ref/Job No: 09SYDPLA-0034

16 December 2009

Dear Eric,

Re: Targeted Surveys for Sub-Precinct 2.4

Eco Logical Australia Pty Ltd was commissioned by the Western Sydney Parklands Trust Pty Ltd (WSPT) to undertake an ecological and bushfire constraints assessment of 'Bungarribee' Sub-Precinct 2.4 (Precinct 2) within the Western Sydney Parklands (WSP).

Further to our *Preliminary Environmental Assessment – Ecology and Bushfire Report (Summary for Bungarribee Parklands Sub-Precinct 2.4)* dated 9 September 2009, please find below a summary of the targeted flora and fauna survey findings requested on 13 October 2009.

Targeted Flora Survey

On 25 November 2009 a targeted flora survey was undertaken to determine the presence of threatened flora species across the site, in particular *Grevillea juniperina* subsp. *juniperina* (Juniper-leaf Grevillea) and *Pimelea spicata* (Spiked rice flower).

Grevillea juniperina subsp. *juniperina* is listed as vulnerable under the NSW *Threatened Species Conservation Act 1995 (TSC Act)*. It is a broadly spreading erect shrub to 2.5 m high, with prickly, narrow, often bright green leaves which are clustered along short lateral branches. The species is endemic to Western Sydney. It has been recorded previously within Cumberland Plain Woodland (CPW) amongst characteristic species such as *Eucalyptus tereticornis*, *E. moluccana*, *Bursaria spinosa*, *Themeda australis* etc (DECCW 2009) (all of which occur in the study area).

The Department of Environment, Climate Change and Water (DECCW) has released a series of Environmental Impact Assessment Guidelines including one for *Grevillea juniperina* subsp. *juniperina* in 2002 (NPWS 2002a). At that time, DECC considered that significant sites for *G. juniperina* subsp. *juniperina* included sites with population sizes of >50 plants with the largest known population being 10,000 plants at a site located between Dean Park and Marsden Park (Colebee Scrub).

These guidelines would now appear to be out of date due to recent recordings of significant populations across Western Sydney, including two very large populations protected and managed for conservation. These significant populations include:

- Wianamatta Regional Park, which contains an estimated population of greater than 400,000 individuals (managed for conservation);
- Air Services Site at Shanes Park, which contains an estimated population of greater than 100,000 individuals (managed for conservation);
- Former Air Services Site at Cranebrook, which contains an estimated population of between 11,000 and 19,000 individuals; and
- Penrith Lakes, along the Cranebrook Escarpment. In recently disturbed areas, surveys have identified approximately 1,000 individuals.

Other significant locations of *G. juniperina* subsp. *juniperina* with populations greater than 100 individuals have been obtained from the Atlas of NSW Wildlife database, and include locations within:

- Nurragingy Reserve, Doonside;
- Dr. Charles McKay Reserve, Mt Druitt;
- Durward Reserve, Deans Park;
- South Street, Marsden Park;
- Jackson Road, Marsden Park; and
- Lenore Road, Erskine Park.

Potential habitat for the species on site occurs within the woodland areas and grassland areas on the fringe of the woodlands, however no *Grevillea juniperina* subsp. *juniperina* individuals were identified during the targeted site survey. When considered in the context of these other significant populations of *Grevillea juniperina* subsp. *juniperina* within Western Sydney, even if isolated individuals did re-occur or re-establish on site prior to development, the species presence would be unlikely to trigger a significant threshold to prohibit the proposed development as it would be expected to occur in very low numbers.

Pimelea spicata (Spiked Rice-flower) is listed as endangered under the *TSC Act*. It is an erect shrub to 50 cm tall, with opposite and elliptical leaves. Tubular white, pink-tinged flowers may appear at any time of the year, but are mostly seen in summer.

Once widespread on the Cumberland Plain, the Spiked Rice-flower occurs in two disjunct areas, the Cumberland Plain (Narellan, Marayong, Prospect Reservoir areas) and the Illawarra. The species is typically found on well-structured clay soils within CPW, in association with *E. moluccana* and Ironbark species (DECCW 2009).

A draft recovery plan has been developed for this species and 19 priority actions (including community awareness, conservation status review, habitat management and protection, and research initiatives) have been identified to help recover Spiked Rice-flower in NSW.

One of the main objectives of the draft recovery plan is to minimise threats such as clearing in areas where the species occurs (DEC 2004). Potential habitat for the species on site is limited and only occurs on the fringe of the woodlands. The dense grassland areas on site, which are dominated by aggressive introduced species, are considered unlikely to be important habitat for the species.

No *Pimelea spicata* individuals were identified during the targeted site survey conducted during optimal seasonal conditions.

The proposed work does constitute a key threatening process of clearing of native vegetation under the *TSC Act* (DECC 2009d). However, given there are currently no species on site and the scale of these impacts within the site on potential habitat is minimal, is not considered to be significant in relation to the Spiked Rice-flower survival requirements.

Drainage Line Flora Survey

A drainage line runs through the southern portion of Shale Plains Woodland (SPW) (a sub-community of the CPW) within the study area. It drains the urbanised catchment in an easterly direction toward a culvert under the M7 and then onto Eastern Creek.

On 25 November 2009 a survey of the vegetation within the drainage line and within 5 m of the top of bank was undertaken. The purpose of this survey was to identify any potential threatened species occurring in this locality. A list of species identified is provided in **Attachment A**. Many of the species are weeds and none of the native species are listed as threatened species under the *TSC* or *EPBC Acts*.

Targeted Cumberland Plain Land Snail Survey

On 25 November 2009 a targeted survey was undertaken to determine the presence of the threatened Cumberland Plain Land Snail (*Meridolum corneovirens*) across the site.

The Cumberland Plain Land Snail has a typical adult shell diameter ranging between 15-30 mm. The colour is generally tan to dark brown with a green or yellow tinge (DEC 2007). The underside of the shell tends to have a glossy appearance and is semi-transparent (NPWS 2000). **Plate 1** illustrates a typical specimen.

Plate 1: Cumberland Land Snail (not recorded on site).



The Cumberland Plain Land Snail is an obligate feeder on fungi that is associated with the roots of *Eucalyptus tereticornis* (Forest Red Gum), and some ironbarks. The land snail's typical habitat occurs under woody debris, leaf litter, bark accumulations around trees, and sometimes within grass clumps (NPWS 2000). Where possible it will burrow into loose soil (DEC 2007). The species will also occasionally shelter under rubbish (DECCW 2009).

Current knowledge suggests that the Cumberland Plain Land Snail is restricted to the Cumberland Plain and Castlereagh Woodlands of Western Sydney and also along the fringes of River-flat Eucalypt Forest, especially where it meets Cumberland Plain Woodland (DEC 2007). As such its distribution is restricted to an area that includes Western Sydney between Prospect and Liverpool to the east and the Hawkesbury-Nepean River to the west. Its distribution reaches north to the Windsor and Richmond area and south to Picton (www.amonline.net.au).

Potential habitat for the species on site occurs within the woodland areas (particularly in association with *E. tereticornis* and *E. moluccana* trees that have deep leaf/ bark litter layers around their base), grass clumps in or near woodland areas, and dumped rubbish or sheet metal in or near woodland areas.

No Cumberland Plain Land Snail individuals were identified during the site survey and habitat was not considered critical habitat due to low levels of leaf litter and the presence of the invasive shrub *Olea europaea* within areas of woodland. However, their presence cannot be ruled out, as potential habitat exists within the study area.

Opportunistic Bird Census

During surveys carried out on 29 July, 25 November and 4 December 2009, opportunistic sightings of bird species were recorded. No listed threatened or migratory bird species were recorded on 29 July or 24 November 2009 (although *Gallinago hardwickii* (Latham's Snipe) was tentatively recorded from the western section of the drainage line) on 24 November 2009. During the survey on 4 December 2009, two individual Latham's Snipe were observed in the eastern portion of the drainage line confirming the presence of the species within the site. Latham's Snipe is listed as migratory under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). This is discussed further below in the section titled *Gallinago hardwickii* (Latham's Snipe).

A complete list of bird species identified at the site, during all surveys (including the preliminary survey on 29 July 2009) is provided in **Attachment B**.

Gallinago hardwickii (Latham's Snipe)

Latham's Snipe is a medium sized wader, with a long straight bill, short pointed wings, a long tail and short legs. It is a non-breeding visitor to SE Australia; it breeds in Japan and far eastern Russia during the northern hemisphere summer. Because the species is highly mobile it is capable of occurring in any reserve (within its range) that contains suitable habitat. It will generally occur in open, freshwater wetlands with low, dense vegetation (e.g. swamps, flooded grasslands or heathlands, around bogs and other water bodies). However, they can also occur in habitats with modified or artificial habitats, and in habitats located close to humans or human activity (DEWHA 2009b).

The major threat to the species is the ongoing loss of habitat. The wetland habitats occupied by Latham's Snipe are threatened by a variety of processes including drainage, diversion of water for storage or agriculture, development of land for urban or other purposes, and land management practices such as mowing of habitat during summer can render it unsuitable for several months (DEWHA 2009b).

The EPBC Act provides a national scheme for protecting the environment and conserving biodiversity values. Approval from the Commonwealth Environment Minister is required under the EPBC Act if an action (which can include a project, development, undertaking or activity) will, or is likely to, have a significant impact on matters considered to be of national environmental significance (matters of NES).

Actions that may have a significant impact on one or more matters of NES need to be referred to DEWHA under the EPBC Act. The EPBC Act referrals process can produce one of three outcomes:

- Non-controlled action (NCA): Assessment and approval under the EPBC Act is not required. The project may proceed without further approval under the EPBC Act.
- Non-controlled action – specified manner (NCA-SM): Assessment and approval under the EPBC Act is not required provided the action is undertaken in a specific way (similar to consent conditions).
- Controlled Action (CA): The project will, or is likely, to have a significant impact on one or more matters of national environmental significance. The project will require full assessment and approval before it can proceed.

The site is not considered important habitat for this species due to low water flow within the drainage on site, sighting of only two individuals, weed infestation and urban disturbance. As the species is highly mobile it is likely to use a range of suitable habitat available within the surrounding landscape, i.e. nearby Eastern Creek and its drainage lines. The proposed works are considered unlikely to sustainably modify, destroy, isolate or result in invasion of exotic species into an area of important habitat for the species.

Given the absence of a known important population of Latham's Snipe within the site, and that no habitat critical to the survival of the species is present within potential impact areas, it is considered unlikely that 'significant impacts' will occur as a result of the proposed works. As such, a referral to the Commonwealth regarding impacts on the Latham's Snipe is not considered necessary.

It is recommended that wetland areas in the vicinity of the drainage line, east of the gas main, be rehabilitated to allow potential habitat for the species to remain on site.

Targeted Green and Golden Bell Frog Survey

On 4th December 2009 a diurnal and nocturnal survey was undertaken to assess habitats available for the endangered Green and Golden Bell Frog (*Litoria aurea*) (GGBF) within the site. The diurnal survey provided an opportunity to search for tadpoles, basking adults and examine suitable ground cover and other potential shelter sites. The nocturnal survey focused on the areas that appeared to have the best habitat attributes for the species that were identified as part of the diurnal survey. All water bodies and drainage lines within the study area were inspected.

No GGBF were detected during the targeted surveys of the subject land and surrounding areas. This was despite weather patterns and seasonality being suitable and a reference site at Sydney Olympic Park having recorded activity for the species during the previous three weeks including the survey period (K. Darcovich pers. comm.). Previous records of the GGBF have been detected in the vicinity of the site (within 5 km), where they have been recorded upstream and downstream within Eastern Creek, in the vicinity of Prospect Reservoir and near Mt Druitt in the Rope's Creek drainage. Most of these records are from the 1960s and 1970s and only the records from the Mt Druitt area are more recent in the 1990s (R. Wells pers. comm.; DEC 2005). As such no current or recent records of the GGBF are known from the vicinity of the site although the species would have occupied the area historically.

No GGBF were recorded on site during the survey. Key areas of potential habitat were located within the following features on site: main drainage line; ephemeral drainage depressions; bunded areas receiving overland flows; sediment basins; stormwater structures, and piles of debris.

The non detection of the GGBF during the targeted survey effort does not enable a conclusion that the species is absent from the site. GGBF could still be present in low numbers, or could otherwise transiently or periodically occupy habitat at the site during migrations from other areas in the catchment from time to time.

Recommendations and more detailed findings are provided in **Attachment C**. It is recommended that the retained riparian areas and rehabilitated wetland areas include designs that incorporate *The Best Practice GGBF Habitat Guide* (DECC 2008b) practices.

The details of these targeted surveys will be incorporated into the final Environmental Assessment documentation. Should you require further details in the interim, please do not hesitate to contact me.

Kind regards,



Eco Logical Australia Pty Ltd

Robyn Johnson

Environmental Scientist

Email: robynj@ecoaus.com.au

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ATTACHMENTS

Attachment A – Flora Species List within Drainage Line

SPECIES NAME	COMMON NAME	NOXIOUS WEED (class within Blacktown LGA)	VEGETATION LOCATION	
			IN-STREAM	BANK
<i>Alisma plantago-aquatica*</i>	Water Plantain		x	
<i>Ammophila Arenaria*</i>	Marram Grass			x
<i>Asparagus officinalis*</i>	Asparagus			x
<i>Avena barbata*</i>	Bearded Oats			x
<i>Briza subaristata*</i>				x
<i>Cardiospermum grandiflorum*</i>	Balloon Vine			x
<i>Centaureum tenuiflorum*</i>				x
<i>Cirsium vulgare*</i>	Spear Thistle			x
<i>Conyza bonariensis*</i>	Flaxleaf Fleabane			x
<i>Cynodon dactylon</i>	Common Couch			x
<i>Cyperus eragrostis*</i>	Umbrella Sedge		x	
<i>Einadia trigonos</i>	Fishweed		x	
<i>Eragrostis curvula*</i>	African Lovegrass			x
<i>Erythrina crista-galli*</i>	Cockspur Coral Tree			x
<i>Foeniculum vulgare*</i>	Fennel			x
<i>Geranium solanderi</i>	Native Geranium			x
<i>Geranium spp.</i>				x
<i>Hardenbergia violacea</i>	False Sarsaparilla			x
<i>Hypericum perforatum*</i>	St. Johns Wort	4		x
<i>Ligustrum lucidum*</i>	Large-leaved Privet	4		x
<i>Ludwigia peploides</i>			x	
<i>Mentha spicata*</i>				x
<i>Morus alba*</i>	White Mulberry			x
<i>Olea africana*</i>		4		x
<i>Pennisetum clandestinum*</i>	Kikuyu Grass			x
<i>Persicaria lapathifolia</i>	Pale Knotweed		x	
<i>Plantago lanceolata*</i>	Lamb's Tongues			x
<i>Rubus fruticosus agg.*</i>	Blackberry complex	4		x
<i>Rumex conglomeratus*</i>	Clustered Dock		x	
<i>Schoenoplectus validus</i>			x	
<i>Senecio madagascariensis*</i>	Fireweed			x
<i>Senna spp.</i>				x
<i>Sida rhombifolia*</i>	Paddy's Lucerne			x
<i>Trifolium arvense*</i>	Haresfoot Clover			x
<i>Typha sp</i>	Cumbungi		x	
<i>Verbena bonariensis*</i>	Purpletop			x

* Indicates weed species.

Attachment B – Bird Species List

SPECIES NAME	COMMON NAME	METHOD	FIRST SIGHTING DATE (2009)		
			29 July	25 Nov	4 Dec
<i>Acantiza lineata</i>	Striated Thornbill	Observed	x		
<i>Cacatua eicapilla</i>	Galah	Observed	x	x	
<i>Coracina novahollandae</i>	Black-faced Cuckoos-Shrike	Observed	x	x	
<i>Corvus mellori</i>	Little Raven	Heard	x		
<i>Egretta novaehollandiae</i>	White-faced Heron	Observed		x	x
<i>Elanus axillaris</i>	Black-shouldered Kite	Observed	x		
<i>Gallinago hardwickii</i>	Latham's Snipe	Observed		x*	x
<i>Grallina cyanoleuca</i>	Magpie Lark	Observed	x	x	
<i>Hirundo neoxena</i>	Welcome Swallow	Observed	x		
<i>Hirundo nigricans</i>	Tree Martin	Observed	x		
<i>Licehnostomus penicillata</i>	White-plumed Honeyeater	Heard	x		
<i>Malurus cyanea</i>	Superb Fairy Wren	Observed	x		
<i>Manorina melanocephala</i>	Noisy Miner	Observed		x	
<i>Platycercus eximus</i>	Eastern Rosella	Observed	x	x	
<i>Psephotes haemototus</i>	Red-rump Parrot	Observed	x		
<i>Rhipidura fuliginosa</i>	Grey Fantail	Observed	x		
<i>Threskiornis spinicollis</i>	Straw-necked Ibis	Observed	x		
<i>Venellus miles</i>	Masked Lapwing	Heard	x		

Shaded rows indicate threatened, migratory or marine species.

* Tentatively identified when flushed from western section of drain (low confidence of definitive identification).

Attachment C – Green and Golden Bell Frog Targeted Survey Report

This attachment outlines the methods, results, conclusions and recommendations with respect to the GGBF on site.

METHODS

The methods employed for the survey were an adaptation of the GGBF EIA guidelines (NPWS 2003) and based on the extent of potential habitat known on the site. The methods were modified on the basis that there had been a considerably long period of time since the species was last recorded in the general area of the site.

On 4th December 2009 a diurnal and nocturnal survey was undertaken to assess habitats available for the GGBF within the site. The diurnal survey provided an opportunity to search for tadpoles, basking adults and examine suitable ground cover and other potential shelter sites.

The nocturnal survey focused on the areas that appeared to have the best habitat attributes for the species that were identified as part of the diurnal survey. A reference site at Sydney Olympic Park, where the species is known to be regularly detected, was also checked for active individuals to ascertain the suitability of seasonal and climatic conditions for detection at the site. Nocturnal survey effort consisted of call play back, spot light and headlamp searches of the best habitat areas for 2 hours, also on 4th December 2009.

All water bodies and drainage lines within the study area were inspected. **Figure 1** shows the site, the areas traversed during the survey and the location of call playback positions.

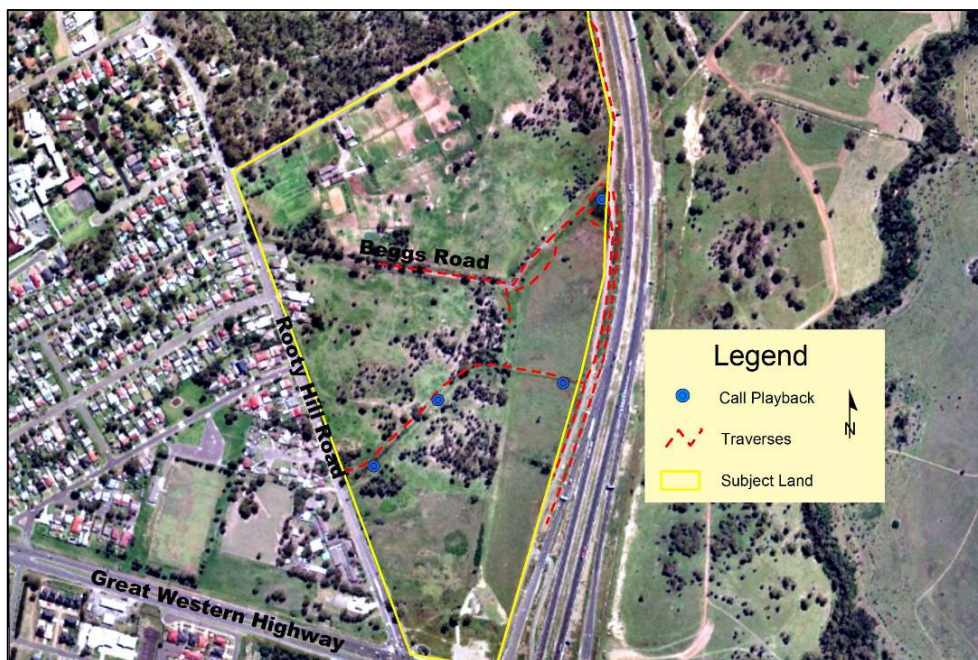


Figure 1 Areas traversed and the location of auditory survey points and GGBF call playback positions

Weather conditions during the survey period are provided in **Table 1** below. Nocturnal Surveys were preceded by 8mm of rain over the previous 4 days. Relative humidity was high during all three survey times.

Table 1 Meteorological data occurring during the survey period

SURVEY DATE	4 TH December 2009			
Meteorological Station	Min °C	Max °C	Rain mm	R/H %
Penrith, NSW	14.3	29.1	0	58
Prospect, NSW	13.8	26.1	0	63

RESULTS

Presence/Absence of Green and Golden Bell Frog

No GGBF were detected during the targeted surveys of the subject land and surrounding areas. This was despite weather patterns and seasonality being suitable and a reference site at Sydney Olympic Park having recorded activity for the species during the previous three weeks including the survey period (K. Darcovich pers. comm.). Previous records of the Green and Golden Bell Frog have been detected in the vicinity of the study site (within 5km), where they have been recorded upstream and downstream within Eastern Creek, in the vicinity of Prospect Reservoir and near Mt Druitt in the Rope's Creek drainage. Most of these records are from the 1960s and 1970s and only the records from the Mt Druitt area are more recent in the 1990s (R. Wells pers. comm.; DEC 2005). As such no current or recent records of the GGBF are known from the vicinity of the study area although the species would have occupied the area historically. See **Figure 2**.



Figure 2 Location of previous Green and Golden Bell Frog Records

A number of common frog species were, however, recorded during the surveys and are listed below in **Table 2**. Details of whether the species has previously been recorded within the locality have also been provided.

Table 2 Frog Species Recorded for the Study area

GROUP	SCIENTIFIC NAME	COMMON NAME	CURRENT STUDY	PREVIOUS LOCALITY RECORDS
Tree Frogs	<i>Litoria aurea</i>	Green and Golden Bell Frog		*
	<i>Litoria fallax</i>	Dwarf Green Tree Frog	*	*
	<i>Litoria peronii</i>	Brown Tree Frog	*	*
	<i>Litoria phyllochroa</i>	Leaf Green Tree Frog		*
	<i>Litoria verreauxii</i>	Verreaux's Tree Frog		*
Ground Frogs	<i>Crinia signifera</i>	Common Brown Toadlet	*	*
	<i>Limnodynastes peronii</i>	Brown-striped Marsh Frog	*	*
	<i>Limnodynastes tasmaniensis</i>	Spotted Marsh Frog		*
	<i>Pseudophryne bibronii</i>	Bibron's Toadlet		*
	<i>Uperoleia laevigata</i>	Smooth Toadlet		*

Potential Habitat for the Green and Golden Bell Frog

Areas of potential habitat were identified during the diurnal survey and these areas have been mapped in **Figure 3** below. These potential habitat areas are not considered to be active or critical habitat for the species, however may provide refuge or temporary breeding habitat for transient individuals in the area. Key areas of potential habitat were found to be located within the following features within the site:

- Main drainage line;
- Ephemeral drainage depressions;
- Bunded areas receiving overland flows;
- Sediment basins;
- Stormwater structures, and
- Piles of debris.






It should be noted that the exotic predatory fish, Plague Minnow (*Gambusia holbrooki*) was detected in some of the water bodies on the site. Predation by *G. holbrooki* is listed as a Key Threatening Process under the TSC Act. The presence of this exotic fish species in some of the pooled sections of the drainage line suggests that it would likely be present in all water bodies within the study area during flood or overland flow episodes. *G. holbrooki* is likely to reduce the breeding success rate of any GGBF (or other frog species) breeding efforts in the habitats present. The sediment/retardation basins adjacent to the M7 Motorway batter (RTA land) have drainage invert installed that manage water levels and also appear to provide some opportunity for management/control of *G. holbrooki* in the ephemeral habitat provided by the basins.



Details of the habitat values of these features have been provided in **Table 3** below. As these areas are not considered to be critical to the species, they are suitable for reasonable levels of modification as part of site development, provided that habitat components for the GGBF are factored into redesign of the riparian corridor and constructed wetlands. Generic control measures for mitigation of impacts to such habitats have also been briefly discussed in this table. More detailed discussion of such recommendations is provided in the following section.



Figure 3 Potential Green and Golden Bell Frog habitat within the site

Table 3 Description of habitat areas and values within the site and surrounding lands

HABITAT AREA	SITE PHOTO	DESCRIPTION OF HABITAT VALUES	GENERIC CONTROL MEASURES
Main Drainage Line		<p>Main drainage line has sections that retain pooled areas during non flow periods. These pooled sections of the creekline provide potential breeding sites.</p>	<p>In the areas where the main drainage line is not being piped the creekline should be rehabilitated and sections created where water pools during non flow periods.</p>
Main Drainage Line Vegetation		<p>Sections of the main drainage line have extensive bands of sedges.</p>	<p>Sections of the open creek that are retained and rehabilitated should have suitable native sedges re-established.</p>
Ephemeral Breeding Habitat		<p>Ephemeral breeding habitat exists in the north east section of the subject land where it is bunded by the extension of Beggs Road.</p>	<p>The area east of the gas pipeline easement should be retained if possible and enhanced with additional swales and other habitat elements as part of a broader wetland habitat area. This will buffer and filter drainage from upslope before its diversion beneath the M7 and provide /retain GGBF habitat in the locality. Supplementary features may be better positioned parallel to main flow paths.</p>
Sediment and Flood Mitigation Basins		<p>Sediment and flood mitigation basins are provided along the M7 batters. These are good examples of ephemeral habitat and are improved when surrounded by fringing rushes and sedges. The existing gabion bunds reduce flow rates and retain water for extended periods.</p>	<p>Where such features are required as part of the current site design modification as part of the proposal fringing vegetation should be replaced with a similar suite of native plant species.</p>
Stormwater Structures		<p>The species is known to inhabit almost every type of water body except fast-flowing streams.</p>	<p>Stormwater structures should be developed that retard damaging high volume flows that would impair habitat values retained or created on site.</p>

HABITAT AREA	SITE PHOTO	DESCRIPTION OF HABITAT VALUES	GENERIC CONTROL MEASURES
Debris		Potential over-wintering habitat is provided by accumulated debris in a number of locations on the site.	This material should be carefully removed at the time of site development to avoid impacts on sheltering frogs. This habitat element should also be an incorporated component of rehabilitation works and any offset habitat provision.
<i>Gambusia holbrooki</i> Control		Flood regulation inverts are provided to drain excessive flood water accumulation and reduce erosion impacts. The rock cairns provide shelter habitat and protect the invert.	Similar inverts could be installed in ephemeral habitat swales to regulate <i>G. holbrooki</i> . The inverts regulate water depth but when removed allow the water to drain and any exotic fish to be eliminated. The rock cairns (using larger rocks protect the invert and also provide refuge habitat.

CONCLUSIONS AND RECOMMENDATIONS

The non detection of the GGBF during the targeted survey effort does not enable a conclusion that the species is absent from the study area. GGBF could still be present in low numbers, or could otherwise transiently or periodically occupy habitat at the site during migrations from other areas in the catchment from time to time.

Most GGBF records from the vicinity of the study site are old 1960s and 1970s when the species was a more ubiquitous faunal element throughout Sydney. Records from the Eastern Creek sub-catchment are all of this period but more recent records of the species are known from the Rope's Creek sub-catchment that merges with Eastern Creek downstream.

It is equivocal whether the failure to detect the species during the survey actually means that the GGBF is absent. However given the somewhat isolated nature of the subject land and the tenuous connections it retains with other parts of the Eastern Creek drainage the site is unlikely to be forming a critical component of habitat for the GGBF in Western Sydney.

A conservative approach could be adopted through an assumed presence on the basis of potential habitat. The implications of such an assumption would be to incorporate mitigation measures that provide habitat elements that interconnect with the habitat provided along the M7 motorway batters and viaduct with designed wetlands incorporating GGBF habitat requirements in line with the best practice guidelines. If the species is present, it is likely to be in very low numbers and/or only very occasionally present and these mitigation measures if incorporated into the development proposal would negate a significant impact on the species.

Recommendations

The following recommendations and mitigation measures are in keeping with the various DECCW Recovery Plan initiatives (NPWS 2003; DEC, 2005; DECC 2008 a,b) and aim to increase the GGBF habitat values over the longer term with the view to either encouraging re-colonising of retained habitat or possibly through re-introduction.

The retained riparian areas and rehabilitated wetland area should include a consideration of Best Practice GGBF Habitat Guide (DECC 2008b) practices and include:

- Small ancillary ephemeral breeding habitat depressions should be provided within the wetland. This will offset the loss of such habitat provided by the proposed piped sections of the main drainage line. These habitat components should be incorporated into detailed landscaping plans for the area east of the gas pipeline easement. The small ephemeral breeding habitat depressions should be designed to temporally catch intermittent local overland flows. The small depressions need only be 30-50cm deep and no more than 2-5 m² in area. To manage *G. holbrooki* and frog chytrid (fungus), such depressions should be engineered to allow manual drainage following flood events or as a direct management intervention (i.e. have a plug). Two to three of these should be located around the wetland. Revegetation should

incorporate suitable native sedges and rush vegetation to provide habitat elements for the GGBF and other migratory fauna species.

- All constructed wetland should include basking areas that are comprised of a suite of sedges and rushes and strategically positioned rocks and logs away from the banks.
- Over wintering habitat should be provided as habitat elements of the wetland (positioned to allow for northern sun exposure) and consist of cairns of large boulders. These cairns should consist of 30cm diameter irregular shaped blocks of clean quarried rock, piled to a mound approx 0.5m high and cover an area of approximately 10m². Ideally 2 to 3 cairns would be available in the wetland.
- Consideration should be given to provide some fish free breeding habitat ancillary to the main drainage line within the wetland habitat area and designed so that *G. holbrooki* and other exotic predatory fish can be eradicated easily when and if they colonise these areas.
- Monitoring of frog utilisation of rehabilitated or retained habitat areas is desirable and consideration of the locality as a reintroduction site for the GGBF should be a further consideration if the opportunity and desire from DECCW/BCC/SCA was evident. Such measures would be consistent with the objectives of the Recovery Plan, the DECCW Priority Action Statement (PAS) for the species as well as the various GGBF Key Population Management Plans (DECC 2007a-h; 2008a-c).

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**Western Sydney Parklands Eastern Creek Business Hub
Request for Director General Requirements**

Appendix E

**Infrastructure and Services Assessment
Prepared by J. Wyndham Prince**



Our Ref: 8801 WSP 111108 ServRep
SAG:sd

8 November 2011

Western Sydney Parkland Trust
Level 4
10 Valentine Street
PARRAMATTA, NSW 2150

Attn: Mr Eric Brodie

Subject: Eastern Creek Business Hub – Services Feasibility.
Staged Development Application

Dear Sir,

As requested J Wyndham Prince has undertaken a preliminary review of the services and stormwater infrastructure associated with the site of the proposed Eastern Creek Business Hub. The site is shown at Figure 1 at the end of this report. The following summarises the results of this preliminary review.

High pressure Gas Main.

The site presently is traversed by a significant high pressure gas main, which runs approximately north / south through the site, along the alignment of the unformed Belmore Rd. This affects the east side of the site closer to the M7. This area is not proposed for development, and as such the proposed development will not require the main to be relocated or affected in any way. The existence of the main imposes a design constraint on the location of the sewer, as discussed below, and on the location of drainage structures. The gas main appears to be located within an earth embankment. Crossing the gas main for any utility requires careful planning and execution, a high degree of consultation with and approval from Jemena.

Sewer

There is significant sewer infrastructure adjoining the site. The existing residential development to the west of Rooty Hill Road South drains to an existing Sewage Pumping Station (SPS 0395). This pumping station then drains via a rising main along Rooty Hill Road South into a 300mm gravity main to the north of the proposed development. At present the capacity of this system to absorb development in the site has not been confirmed by Sydney Water, but should be assumed to be unlikely.

There is a 900mm sewer to the east of the M7 motorway, which is understood to have been constructed to accommodate the development within the site. Access to the new main will however require underboring both the M7 and the major High Pressure gas main running along the alignment of Belmore Road.

The location of the new carrier to the east has been searched and a number of potential connection points have been identified. The selection of the appropriate connection point requires

that the invert level achieved by that point is sufficiently deep to allow the sewer to be below the gas main, and run through the site at a grade sufficient to provide an effective sewerage system.

One alternative will be to connect at a point north of Church Street (approx 450m north east), where the sewer has been constructed on the western side of the gas main, and therefore crossing the gas main would not be necessary. The proposal will need to balance the cost of an extended sewer main, and the design constraints that may be imposed against the cost of further underboring and encasing a sewer under the gas main.

A formal application will need to be made to Sydney Water to confirm these design options. There are some potential benefits to Sydney Water in the construction of the new main under the M7, as this may allow the existing SPS to be decommissioned (and connect the residential area west of Rooty Hill Road South directly to the new sewer through the site.

An alternative solution with short term capacity to service a first stage development is the installation of a low pressure system draining to the existing pump station. A low pressure system can be devised to pump out during off peak times. Confirmation of the alternative will need to be given by Sydney Water.

Water

There are a number of potable water mains adjacent to the site. A formal application to Sydney Water will confirm the capacity of these mains to service the proposed development. The most likely and effective connection will be to an existing 300mm main located to the south of the site Sydney Water will estimate the total water demand from the development only when a specific development proposal is presented. However, the existing 300mm mains and alternatives present adjoining the site should provide adequate capacity.

Electricity

At present the site has access to low voltage residential power on the Rooty Hill Road South frontage that also provides service to the existing residences. High voltage lines exist overhead on the west side of the road. Advice from Integral Energy is that the reticulation system is constrained through this area with limited scope for expansion. The magnitude of development proposed for the site will require the installation of a new HV (11kV) feeder line from a zone substation. This will need to be connected from the proposed new Bungarribee zone substation proposed for Doonside located near Eastern Road. The sub station site is to the north east of the proposed development site. The Bungarribee zone substation is planned to be commissioned by December 2011.

The assumed power load required for the development of the site will create a demand equivalent to 2.5 to 5.0MVA. This is effectively the capacity of a single 11kV feeder.

In the short term, for the first stages of the development, it may be possible to upgrade one or some of the local distribution transformers without the need for a new 11kV feeder from a zone substation.

Gas

Gas is available to the site via an existing 50mm main located in Rooty Hill Road South. This has the capacity to service the proposed uses according to Jemena, the relevant supplier. Further upgrades of the existing supply may need to be considered, depending upon the specific development proposals, if high energy users are proposed.

Telecommunications

Under Section 9 of the Telecommunications (Consumer Protection and Service Standards) Act 1999 (Cth), Telstra has an obligation (Universal Services Obligation) to ensure that the standard telephone service, payphones, prescribed carriage services and digital data services are reasonably accessible to all Australians on an equitable basis, wherever they reside or carry on business. Therefore it is the responsibility of Telstra to provide phone services to the proposed development area.

The adjoining urban area is presently serviced with overhead telecommunication cable; the extension of this to any proposed development is a relatively simple matter. In this respect the proposed development can be adequately serviced with a simple phone service.

It is assumed that the proposed development will require services to be located underground and Telstra will provide the cables, conduits and access chambers while the excavation of the service trenches (along permanent access roads) into which the cable will be placed and subsequent backfilling will be the responsibility of the developer. This service trench would form part of the shared services trenching with Jemena, Integral Energy and Telstra. Reticulation costs would not be incurred by the developer if suitable service trenches are provided. Furthermore, if as a result of the proposed development, any relocation of existing Telstra network infrastructure is required, it will be borne by the developer.

While a basic phone service will be provided by Telstra, broadband services may be provided through the extension of the existing overhead network by Telstra with the service dependent on exchange based infrastructure. This will be dependent on commercial arrangements between end users and service suppliers. It is also possible that additional conduits can be provided at the construction stage to ensure that a number of broadband providers can service the area. Subject to timing of the development, and the rollout of the National Broadband Network, the provision of optic fibre facilities through the precinct will need further investigation.

Storm Water

The existing storm water system across the site is not well developed.

The site drains to the east via two box culverts under the M7. The northern culvert drains the northern part of the site. The catchment draining to this culvert includes an area of Rooty Hill further to the north and west. There is no infrastructure to facilitate drainage and water flows overland to the culvert. As a result there is a large expanse of water sitting in the vicinity of the culvert that does not appear to flow. It was also evident on site that algal blooms form within the standing water.

It also appears that the northern drainage system suffers from a lack of fall across the M7, with the downstream side no lower than the upstream. Water is being held against the M7 embankment to allow sufficient hydraulic grade to build in order to drain. This circumstance will eventually modify the vegetation type surrounding the culvert, as the ground conditions will be permanently wet. The development proposal and vegetation management plan may need to consider construction of a more formal water feature that will allow water to be held in a manner that will improve water quality rather than encourage algal blooms, and random establishment of vegetation types.

The southern M7 culvert is intended to drain the south portion of the site, with the catchment including a portion of the residential area to the west of Rooty Hill Road South. The residential area drains under Rooty Hill Road South via a culvert which is then intended to be connected to the culvert under M7 by a formed channel. The southern channel does not drain across the high pressure gas main. The channel is in poor condition and largely overgrown in sections, the

upstream culvert is submerged and water does not appear to flow at all from this point. The inlet pits on Rooty Hill Road South and Cable Place are all in poor condition with large amounts of accumulated silt and rubbish blocking any view of the pipe network. The surrounding roadways are flat, to the extent that water will stand within the gutter after rain, and does not drain.

In this area, Rooty Hill Road South is flat and appears to experience drainage difficulties.

It is evident that the existing channel to the southern culvert will need significant work to be made effective. Any new channel would be best located to utilise the existing culverts under Rooty Hill Rd South and the M7. The critical issue to be addressed is the ability of the site to drain naturally to either of the two existing culverts under the M7. The masterplan and subdivision layout will need to accommodate a drainage channel, and allow for adequate drainage across the southern portion of the site. It may be appropriate to incorporate a water body to assist in providing for effective drainage of the southern portion of the site to the northern section of the site, to avoid crossing the high pressure gas main.

Conclusions

The site can be serviced with all utilities necessary to support the proposed development.

The development will require the construction of a new sewer under the M7, and connecting to an existing sewer located east of the M7. This presents the possibility of improving sewer services to adjacent land by the connection of a new gravity sewer.

The development will require the upgrade of high voltage electrical infrastructure, which is largely being planned for the area through the construction of a new zone substation to service Doonside.

Storm water will need to be adequately managed and a comprehensive and integrated stormwater and vegetation management plan will be required to ensure standing water on the site is improved in quality both from a water quality improvement perspective and from an aesthetic perspective.

Yours faithfully

J. WYNDHAM PRINCE



STUART GREEN

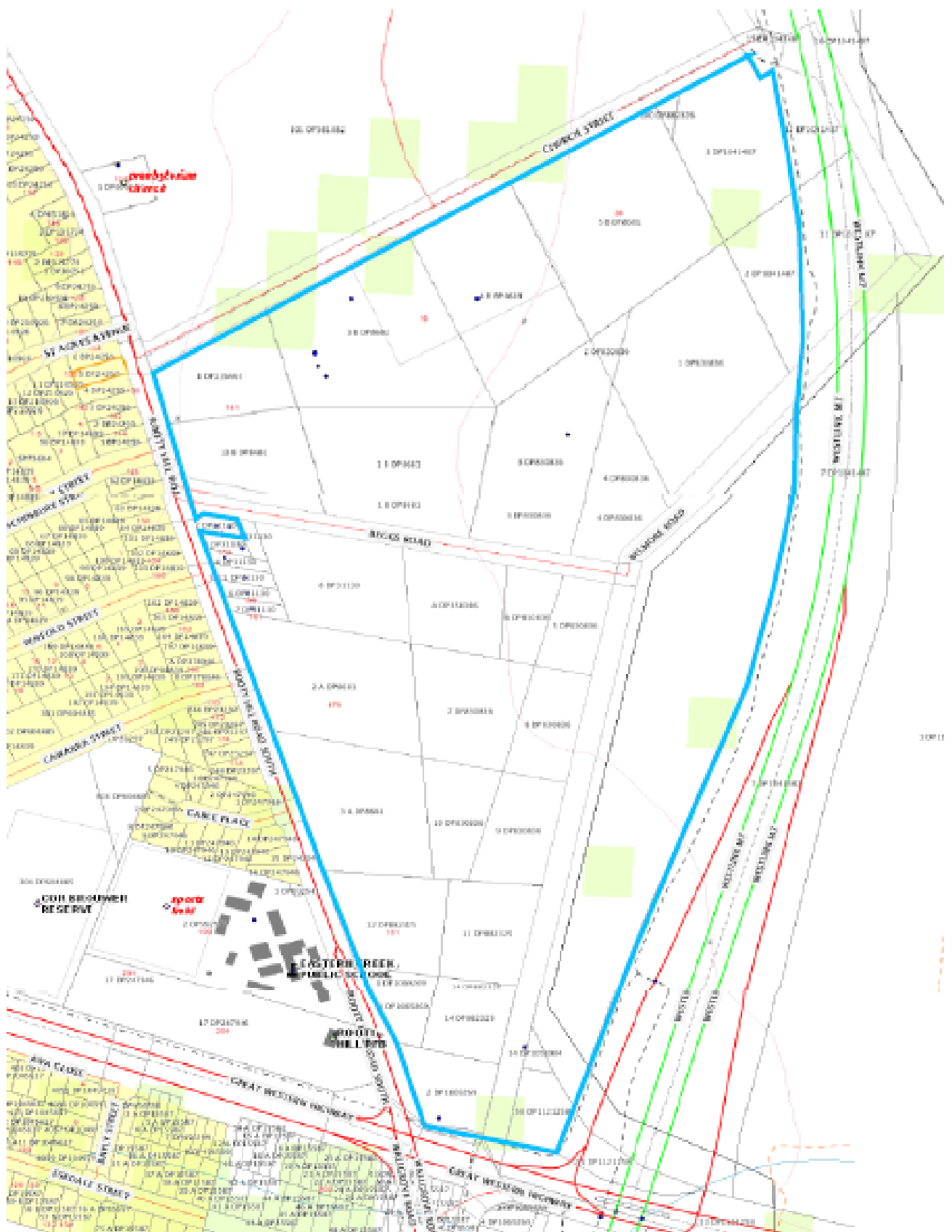


Figure 1 Eastern Creek Business Hub site



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**Western Sydney Parklands Eastern Creek Business Hub
Request for Director General Requirements**

Appendix F

**Site Appraisal (Geotechnical and Contamination)
Prepared by Douglas Partners**



Douglas Partners
Geotechnics • Environment • Groundwater

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PG:jlb
Project 71065.01
13 July 2009

Charter Link
64B Enmore Road
NEWTOWN NSW 2042

Attention: Mr Greg Walters

Dear Sirs

**SITE 2.4 PRECINCT 2 WESTERN SYDNEY PARKLANDS, DOONSIDE
PRELIMINARY SITE APPRAISAL**

1. INTRODUCTION

As requested, Douglas Partners (DP) has undertaken a preliminary appraisal of the abovementioned site which is understood to potentially form part of the future Western Sydney Parklands development. The appraisal was commissioned by Charter Link to assist the relevant parties in deciding on the suitability of the subject site for inclusion in the development. The position of Site 2.4 is shown on the attached "Precinct 2" drawing.

The objective of the appraisal is to assess the likely geotechnical and environmental characteristics of the site and provide a preliminary appraisal regarding geotechnical and contamination issues / constraints which may impact the future development potential.

The scope of work included in this appraisal comprises:

- A brief site inspection from the western, southern and northern boundaries (i.e. no site access was granted at the time);
- Review of limited number of historical aerial photographs covering the site;
- Review of mapping information covering the site area; and
- Brief review of past projects in the vicinity of the site, held in the DP database.

2. SITE OBSERVATIONS

The brief inspection of the site, carried out by the author of this report on 13 July 2009, resulted in the following general observations:

- The site is a large land parcel bound by the M7 Motorway to the east, Church Street to the north, Rooty Hill Road South to the west and the Great Western Highway to the south;



- The site is essentially a large rural property (or combination of several rural properties) with a small parcel of several urban residential properties on the corner of Rooty Hill Road South and Beggs Road;
- The northern portion of the site appears to be used for horse grazing/agistment, with several stables and a number of small individual paddocks being present. A two storey brick residence is also located in this portion of the site. The three stable structures west of the residence were old and dilapidated and may have been associated with historical agricultural uses;
- The southern portion of the site (i.e. south of Beggs Road) comprises essentially open grasslands, numerous scattered native trees and a number of tree clusters. A man-made drainage channel passes through this portion of the site;
- The urban residential properties at the south-eastern corner of Rooty Hill Road South and Beggs Road are of essentially weatherboard, brick or fibro construction;
- The south-eastern corner of the site contains a fenced off trunk receiving station associated with Jemena Gas Networks. To the south-west of this area are numerous stockpiles of soil and rubble (many of which are now covered in grass). It is likely that these have been illegally dumped, given that there is no security fencing preventing such activities;
- Topographical relief across the site is slight, with a very slight grade towards the east. There is one natural drainage course observed in the northern portion of the site, and the man-made drainage channel in the southern portion. There may be other preferential drainage courses within the site; but such are not immediately apparent from the boundaries;
- There are no obvious indicators, such as scalding, salt crusting or clusters of salt tolerant plant species, of high soil salinity observable from the site boundaries.

3. HISTORICAL AERIAL PHOTOGRAPHS

An examination of historical aerial photographs in the possession of DP resulted in the following observations:

In the 1970 photograph there is evidence of substantial market gardening in the northern portion of the site. There are also a number of elongated sheds in the same area (indicators of potential poultry farming). The remainder of the site comprises rural properties with several dwellings noted fronting Rooty Hill Road South, Beggs Road and Church Street (note that the majority of these dwellings are no longer obvious in 2009).

In the 1998 photograph the market gardening observed in the northern portion is no longer apparent, having been replaced by horse paddocks and stables (as observed in 2009). The majority of the dwellings associated with the rural properties are no longer apparent. The urban properties on the corner of Rooty Hill Road South and Beggs Road are present at this time.

In the 2002 photograph the appearance of the site does not differ significantly from that observed in 1998.

4. MAPPING INFORMATION

Reference to the 1:100 000 Soil Landscape Map of the Penrith indicates that the site includes two soil landscapes which are summarised below:

- *Blacktown Soil Landscape* - present over the western section of the site and is characterised by a topography of "gently undulating rises on Wianamatta Group Shale, with local relief to 30 m and slopes usually less than 5%". This is a residual landscape and comprises up to four soil horizons that range from shallow red-brown hard-setting sandy clay soils on crests and upper slopes to deep brown to yellow sand and clay soils overlying grey plastic mottled clay on mid- to lower slopes. These soils are typically of low fertility, are moderately reactive and have a generally low wet bearing strength.
- *South Creek Soil Landscape* – present over the eastern section of the site and is characterised by a topography of "flat to gently sloping alluvial plain with occasional terraces". This is a fluvial landscape (in this case associated with Eastern Creek) and includes often very deep layered sediments. Where pedogenesis has occurred, developed soils include sandy to sandy clay loams, clay loams and brown clays. These soils are typically of low fertility, may be of moderate reactivity and are subject to waterlogging.

Reference to the Penrith 1:100 000 Geological Series Sheet indicates that the site is underlain by Bringelly Shale of the Wianamatta Group of Triassic age. This formation typically comprises shale, carbonaceous claystone, sandstone laminite and some minor coal bands. These rock units typically weather to form clays of medium and high plasticity. The bedrock is mantled by Quaternary alluvium within valley floors of the Eastern Creek and Bungarribee Creek system.

The Department of Infrastructure Planning and Natural Resources (DIPNR) infers "moderate salinity potential" on their map entitled "Salinity Potential in Western Sydney 2002". These DIPNR inferences are based on soil types, surface levels and general groundwater considerations but are not in general ground-truthed.

5. DOUGLAS PARTNERS PAST PROJECTS

DP has completed a number of geotechnical and environmental investigation projects in the vicinity of the subject site, including other sites within Precinct 2 of the Western Sydney Parklands Development. Pertinent information extracted from the results of some of these investigations includes:

- Residual clay (moderately to highly reactive to moisture variations) of 1 – 2 m depth overlying shale and sandstone to the west of the subject site;
- Silty clay and gravelly clay (moderately to highly reactive to moisture variations) of up to 3 m depth overlying shale, sandstone and siltstone to the east of the subject site;
- Shallow groundwater is not common in the area;
- Near surface soils are generally slightly saline; but salinity may increase with depth (typically at depths of 1.5 – 2 m);
- The residual soils of the area generally have a moderate erosion potential.

6. GEOTECHNICAL ISSUES/CONSTRAINTS

From a geotechnical perspective, the subject site appears to have the typical characteristics of many areas of Western Sydney, including large expanses of relatively flat land, impermeable clayey soils, moderate salinity and erosion potential.

There are no obvious major constraints to future development and the typical geotechnical characteristics (such as possible waterlogging) of the site could be managed / overcome using good engineering practices. Further investigations are recommended to more completely compile site specific characteristics and assign engineering methods to aid in the future development of the site.

7. CONTAMINATION ISSUES/CONSTRAINTS

Based on the scope of work undertaken, there do not appear to be any significant contamination issues associated with the subject site that would preclude future development. There are, however, a number of potential contamination issues that would need to be investigated further and managed appropriately, if confirmed. These include:

- Potential pesticides and heavy metals in surface soils associated with past agricultural activities;
- Potential use of asbestos pipes for drainage associated with the former market gardens;
- Potential asbestos beneath and around the footprints of existing and former houses and sheds within the subject site;
- Potential contaminants (particularly asbestos) contained within the dumped stockpiles and soil and rubble observed in the southern portion of the site; and
- Potential localised areas of past landfilling (although there is no direct evidence suggesting this occurred).

8. CONCLUDING COMMENTS

Based on the limited scope of works undertaken, our preliminary appraisal of the subject site suggests that there are no major geotechnical or contamination factors that would render the site unsuitable for future development as part of the Western Sydney Parklands. Further investigation are required, however, to more completely assess the site characteristics and identify remediation and/or management techniques to be implemented as part of the future development.

This report and associated documentation has been prepared for the use of Charter Link in its assessment of the suitability of the site for inclusion in development plans for the Western Sydney Parklands – Precinct 2. The information within is of a preliminary nature and should not be used on its own for costing or design purposes.

7 November 2011

Western Sydney Parklands Trust
Level 4
10 Valentine Avenue
PARRAMATTA NSW 2150



GRAHAM BROOKS
AND ASSOCIATES

ARCHITECTS
PLANNERS AND
HERITAGE
CONSULTANTS

Dear Sirs

Eastern Creek Business Hub Western Sydney Parklands Preliminary European Heritage Impact Assessment

Purpose of this Report

This letter format Report has been prepared as part of the Preliminary Environmental Impact Assessment accompanying an application for a Staged Development Application. The main objective of this Report is to make a preliminary assessment of the European Heritage constraints and likely impact of the proposed development, from a heritage perspective.

Site Description

The subject site, the Eastern Creek Business Hub in the Western Sydney Parklands, is bounded to the west by Rooty Hill Road South, to the south by the Great Western Highway, to the east by the M7 Motorway and to the north by Church Street. During our preliminary site visit we observed the following:

- The majority of the site is vacant, open grassland with scattered tree clumps.
- There are two post 1943 residences on the western edge of the site, at 159 and 161 Rooty Hill Road South.
- There appear to be remnant garden plantings on the vacant land south of 161 Rooty Hill Road South relating to previous occupation of the site.
- An area south of Church Street is utilised for horse grazing and contains a residence and out buildings.
- The location of the earlier form of Beggs Road and Belmore Road can still be read in the landscape.

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Graham Brooks and
Associates Pty Ltd
Incorporated in NSW
ACN 073 802 730
ABN 56 073 802 730
Nominated Architect Graham Leslie Brooks
NSW Architects Registration 3836

Overview of the Site History

The subject site is part of the land utilised by the New South Wales Colonial Government as the Rooty Hill Stock Run before being transferred to the Trustees of the Church and School Corporation. The majority of the site is part of the land sold to three private owners in the early 1870s which was subdivided in 1916. A 1917 auction advertisement plan shows the presence of Belmore Road, Beggs Road and Church Road, which is now known as Church Street. The land north of Beggs Road retains this 1916 subdivision pattern while that to the south was further subdivided into smaller allotments in 1960. The portion of land at the south of the site, west of Belmore Road, is part of two acres of land purchased by the Council of Education in 1871 as the site for Eastern Creek School, now located on the other side of Rooty Hill Road South. With the exception of the school land, the majority of the site is thought to have been in continued agricultural use since European settlement of the area, until it was acquired by the NSW State Government for the Western Sydney Parklands initiative.

Heritage Inventory Searches

Searches of the following Heritage Inventories and Schedules have been made, in the preparation of this Report.

- Register of the National Estate web search, 15 April 2010
- State Heritage Inventory web search, 28 October 2011
- *Blacktown Local Environmental Plan (LEP) 1988*, accessed at www.legislation.nsw.gov.au, 28 October 2011
- *State Environmental Planning Policy (Western Sydney Parklands) 2009*, accessed at www.legislation.nsw.gov.au, 28 October 2011

None of the built or landscape elements of the subject site, the Western Sydney Parklands Eastern Creek Business Hub, are listed as an item of heritage significance on any of these inventories and schedules. In particular, none are listed on the *State Environmental Planning Policy (SEPP) (Western Sydney Parklands) 2009* heritage schedule. The following heritage items have been identified in the vicinity of the subject site:

- **The Rooty Hill:** Listed on the State Heritage Register as an item of State significance and as an Indicative Place on the Register of the National Estate. The identified State Heritage Register curtilage for Rooty Hill includes Precinct 2.3 of the Western Sydney Parklands, and is immediately north of the subject site, on the other side of Church Street.
- **Pioneer Memorial Church, Rooty Hill Road South:** Listed as an item of local heritage significance in Schedule 2 of the *Blacktown LEP 1988*. This building is situated on Lot 1 of DP 909138 and is within the boundaries of the identified State Heritage Register curtilage of The Rooty Hill. The bushland curtilage of the Church is essentially confined to the forest north of Church Street.
- **Belvedere, 116 Rooty Hill Road South:** Listed as an item of local heritage significance in Schedule 2 of the *Blacktown LEP 1988*. (Note: This item is separated from the subject site by the roadway and intervening residential development. It has no visual connection with the subject site).

The Staged DA Proposal

The Staged DA proposal includes the demolition of the existing built structures on the site and the Master Planning for the site, including site layout, street network and building envelopes.

Heritage Impact Assessment

There are no listed heritage items within the Western Sydney Parklands Eastern Creek Business Hub. Those located within the vicinity of this precinct are listed as items of heritage significance on the State Heritage Register and in Schedule 2 of the *Blacktown LEP 1988*, not the heritage schedule of *State Environmental Planning Policy (SEPP) (Western Sydney Parklands) 2009*.

Under the *Blacktown LEP 1988* the consent authority may require a Heritage Impact Statement to be submitted with the development application.

It is considered that the likely heritage impact on the listed items in the vicinity of the Western Sydney Parklands Eastern Creek Business Hub site will be limited to that of views within their wider visual context. The assessment of these views could be considered as part of the broader visual assessment that may be undertaken as part of the preparation of the Environmental Assessment, as an alternative to a separate Heritage Impact Statement.

Conclusions

- There are no listed heritage items within the Western Sydney Parklands Eastern Creek Business Hub.
- Those located within the vicinity of this site are listed as items of heritage significance on the State Heritage Register and in Schedule 2 of the *Blacktown LEP 1988*, not the heritage schedule of *SEPP (Western Sydney Parklands) 2009*.
- Our Preliminary Heritage Impact Assessment indicates that the likely heritage impact on the listed items in the vicinity of the Western Sydney Parklands Eastern Creek Business Hub site will be limited to that of views within their wider visual context. The assessment of these views could be considered as part of the broader visual assessment that may be undertaken as part of the preparation of the Staged DA, as an alternative to a separate Heritage Impact Statement.

Yours faithfully
GRAHAM BROOKS AND ASSOCIATES



Gail Lynch
Associate Director

gaillynch@gbaheritage.com



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**Western Sydney Parklands Eastern Creek Business Hub
Request for Director General Requirements**

Appendix G

**Heritage Impact Assessment,
Prepared by Graham Brooks and Associates**

7 November 2011

Western Sydney Parklands Trust
Level 4
10 Valentine Avenue
PARRAMATTA NSW 2150



GRAHAM BROOKS
AND ASSOCIATES

ARCHITECTS
PLANNERS AND
HERITAGE
CONSULTANTS

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Conclusions

- There are no listed heritage items within the Western Sydney Parklands Eastern Creek Business Hub.
- Those located within the vicinity of this site are listed as items of heritage significance on the State Heritage Register and in Schedule 2 of the *Blacktown LEP 1988*, not the heritage schedule of *SEPP (Western Sydney Parklands) 2009*.
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Yours faithfully
GRAHAM BROOKS AND ASSOCIATES



Gail Lynch
Associate Director

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architectus™

**Western Sydney Parklands Eastern Creek Business Hub
Request for Director General Requirements**

Appendix H

**Archaeological Assessment
Prepared by Kayandel Archaeological Services**

Mr Eric Brodie
Western Sydney Parklands Trust
Level 4, 10 Valentine Avenue
Parramatta NSW 2150

21st November 2011

Dear Mr. Brodie,

This letter of advice has been prepared for the Western Sydney Parklands Trust as part of a Preliminary Environmental Assessment under *State Environmental Planning Policy (State and Regional Development) 2011*. Eastern Creek Business Hub of the Bungarribee Precinct Project forms the application area.

Whilst Kayandel Archaeological Services has completed a site inspection of the application area, no archaeological survey or assessment has been completed over the application area. This letter therefore relies solely on previously completed assessments for the surrounding area.

The application area is roughly trapezoidal in shape and located to the east of Rooty Hill South Road on flat to very gently sloping terrain, immediately south of Church Street and the footslopes of "Rooty Hill". The M7 motorway forms the eastern boundary of the application area and separates the application area from the Eastern Creek floodplain. The Great Western Motorway forms the southern boundary of the application area.

The following documents and registers have been consulted in preparing this letter :

- AHIMS Register (11th August 2009);
- Jo McDonald CHM 2006. Aboriginal Archaeological Assessment: Western Sydney Parklands – Phase 1, Bungarribee Precinct and Interface Lands. February 2006. Report prepared for APP on behalf of Landcom and DIPNR;
- Jo McDonald CHM 2007. Indigenous Heritage Impact Statement Western Sydney Parklands: Bungarribee Precinct Project. August 2007. Report prepared for APP on behalf of Landcom and DoP;
- 1943 Black and White Aerial Imagery (Six Viewer – viewed August 2009);
- Google Earth online imagery (viewed August 2009).

A search of the AHIMS register conducted on 11th August 2009 showed no recorded Aboriginal sites within Eastern Creek Business Hub (the application area). A total of 348 Aboriginal sites are known within 5km of the application area, 105 of which occur within a 3km.

Most (94%) of the 105 sites within a 3km radius of the application area are open campsites (isolated artefacts and artefact scatters). The remaining 6% includes four PADs, one scarred tree and one art site. Additional sites are known within the search area that have not been registered with AHIMS.

The results are indicative of the large number of archaeological assessments that have occurred within the local region, the prominence of artefact scatters in the archaeological record and also the continuous spread of Aboriginal occupation on the Cumberland Plain.

The closest and most relevant studies of Aboriginal archaeology were undertaken by Jo McDonald Cultural Heritage Management Services in 2006, immediately east of the application area within the Bungarribee Precinct and Interface Lands. This survey identified 52 surface archaeological sites, along with five areas of Potential Archaeological Deposit (PAD).

Excavation to the east of Morreau Reserve between Church Street and Eastern Road, approximately 300m north of the application area, was undertaken by Robynne Mills in 2002 (Jo McDonald CHM

2006:13). A total of 83 artefacts were recovered predominately along a low a spurline next to the Eastern Creek floodplain. The deposits were identified as highly disturbed during the excavation.

Areas of intact archaeological deposit can occur where existing soil profiles have been minimally disturbed. A preliminary review of previous land-use impacts has been undertaken through review of aerial imagery available on Six Viewer (Department of Lands) and GoogleEarth and a site inspection on 12th August 2009.

A number of high and moderate impact disturbances were noted across the application area. The prior disturbances equate to approximately 50% of the site and include past agricultural activity, dams, infrastructure and built structures. Many of these areas have little to no archaeological potential. Areas of lower levels of disturbance were identified and these areas may contain less disturbed subsurface archaeological materials, subject to further investigations at the Environmental Assessment Phase (See Figure 1).

No Aboriginal objects or places were noted during the site inspection. However visibility was exceedingly poor over approximately half of the application area. Low levels of visibility present an impediment to accurate archaeological survey and assessment.

The following predictions for Aboriginal sites to be present within the application area are based on the landforms present (lower slope) and a review of the archaeological model for the Bungarribee Precinct presented by Jo McDonald CHM (2006, 2007).

- There is little potential for scarred trees within the application area, although scars could be present on mature trees near the gas main within the south of the application area.
- There is no potential for grinding groove sites or rockshelters due to a lack of suitable rock outcrops.
- Both surface and subsurface artefacts may occur across the entire application area.
- The size, density and significance of sites will vary although it is anticipated that any sites will be considerably less complex and less dense than those within 250m of major watersources such as Eastern Creek, or along spurlines and elevated positions overlooking Eastern Creek.
- No lithic raw material outcrops have been identified in the application area, however there are numerous, significant raw material sources within 7km of the application area. Any archaeological material present within the application area may provide additional understanding to raw material selection in the Cumberland Plain.
- Most sites in the Cumberland Plain date to the last 3,000 years although evidence exists of Aboriginal occupation in this region dating to perhaps the last 20,000 years.
- As past land use disturbance increases in intensity, the ability for Aboriginal objects to provide spatial and chronological information about past Aboriginal land use will decrease.

The presence of water seepages, chain-o-ponds, swampy grounds and a potential paleochannel of Eastern Creek to the east of the M7 motorway may increase the archaeological potential and the significance of the archaeological material within the application area. However, it is unclear whether the identified seepages are associated with paleochannels of Eastern Creek, other natural processes or the result of previous land use disturbances.

There is potential for the following Indigenous heritage constraints to exist within the application area:

- Areas of PAD in locations with minimal previous land disturbance.

Based on the review of the above documents, it unlikely that areas of high archaeological significance will be identified. Any identified cultural heritage values should be able to be effectively managed by a Cultural Heritage Management Plan/Conservation Management Strategy or through offsetting. It is noted that a conservation area is proposed to the east of the application area along the Eastern Creek riparian corridor.

Proposed Concept Proposal

A proposed Concept Proposal to form part of a future Staged DA is included as Figure 2. This subdivides the application area into conservation areas, developable lands, a road, gas main and buffer to gas main.

The proposed conservation areas occur within the eastern part of the Application area and Aboriginal PADs occurring in these areas could be conserved, being PAD 1, most of PAD2, PADs 3 and 5, the north-east part of PAD4, and a small part of PAD6. Construction of ponds and detention basins would affect the south-west part of PAD2 and the northern part of PAD6. If any services or other works which would disturb the ground surface are proposed for the conservation areas they would need to be preceded by archaeological assessment.

Aboriginal objects and PADs within developable lands would be destroyed by proposed works and works in these areas would also need to be preceded by archaeological assessment.

Recommendations for Environmental Assessment

The following tasks are recommended:

1. Consideration of methods of increasing visibility with minimal impact to the ground surface should be explored prior to the completion of a pedestrian archaeological survey with registered Aboriginal stakeholders so as to inform an archaeological assessment of the application area. Overgrazing is one such method.
2. A detailed Aboriginal Archaeological Assessment of the application area. This document should address each of the dot point requirements identified by DECCW (Attachment 1), including identification and consultation with Aboriginal stakeholders.
3. A Cultural Management Plan (CHMP) for the application area and/or integration of the application area into existing CHMP/conservation management strategies so as to effectively manage long term impacts, including subsurface, to the cultural heritage values of the application area.

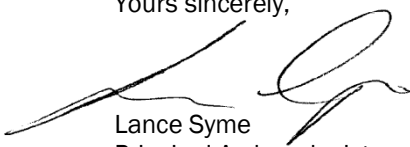
Options for Managing Subsurface Impacts:

If non-intrusive methods for increasing visibility cannot be implemented (as per recommended Task 1 above) and/or subsurface deposits are not exposed, it may be necessary to undertake intrusive methods such as archaeological test pitting to effectively assess the archaeological potential of the application area. Consent from a relevant body of authority will be required for any impacts, including those described above. Contemporary heritage practice is to complete such works with the consent of an Aboriginal Heritage Impact Permit under Part 6 of the National Parks and Wildlife Act 1974 until such time as an approval under *State Environmental Planning Policy (State and Regional Development) 2011* is granted.

Consideration should be given to the completion of limited sub-surface testing as authorised under Requirement 15C of the *Code of Practice for Archaeological Investigations of Aboriginal Objects in New South Wales*. This limited testing should only be employed where information relating to Aboriginal site presence or absence, along with extent and integrity need to be established to provide a more informed design response.

Such an option has the potential to streamline the assessment of archaeological potential.

Yours sincerely,



Lance Syme
Principal Archaeologist
Kayandel Archaeological Services

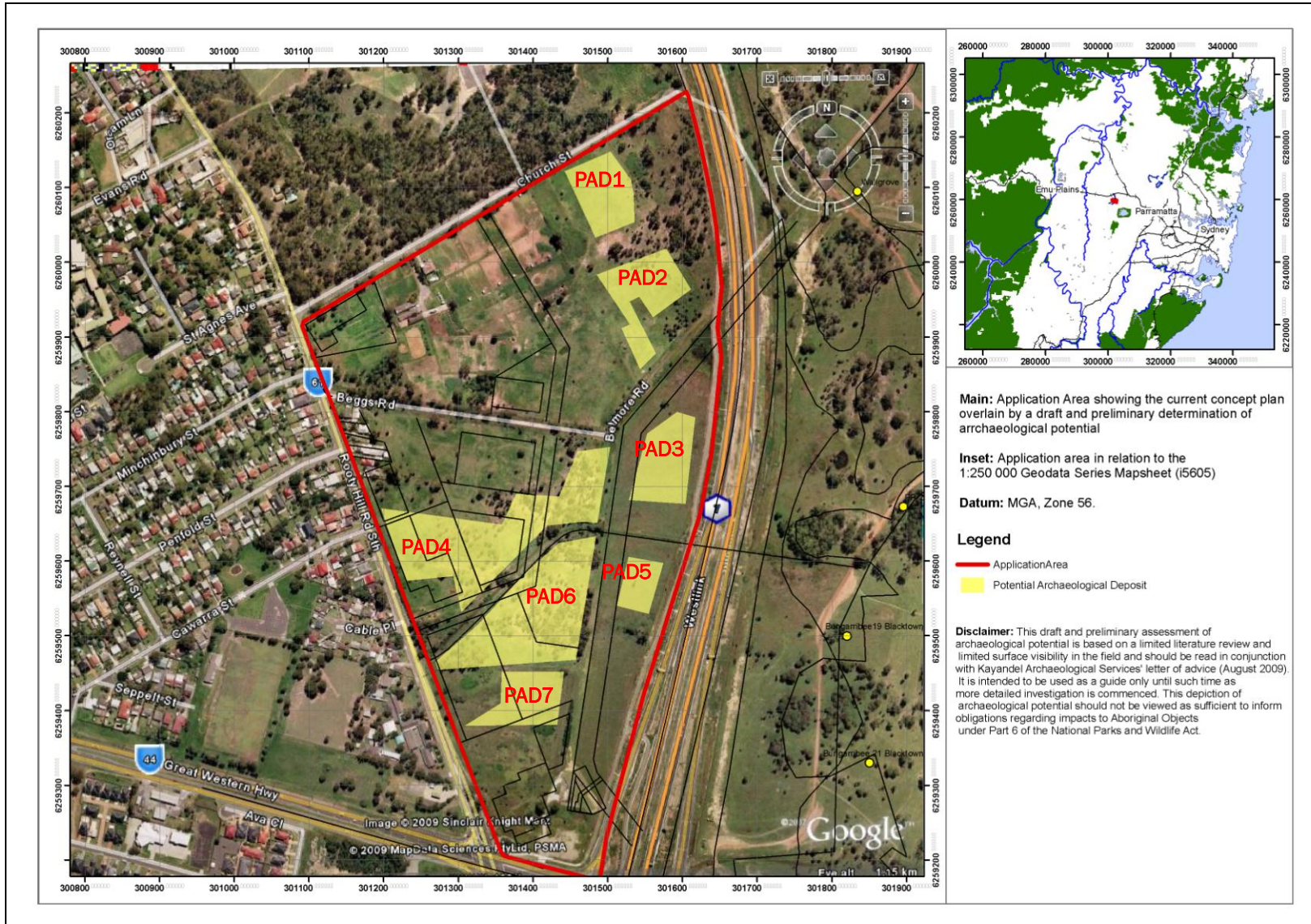


Figure 1: Draft indication of areas of archaeological potential for investigation at Environmental Assessment Phase

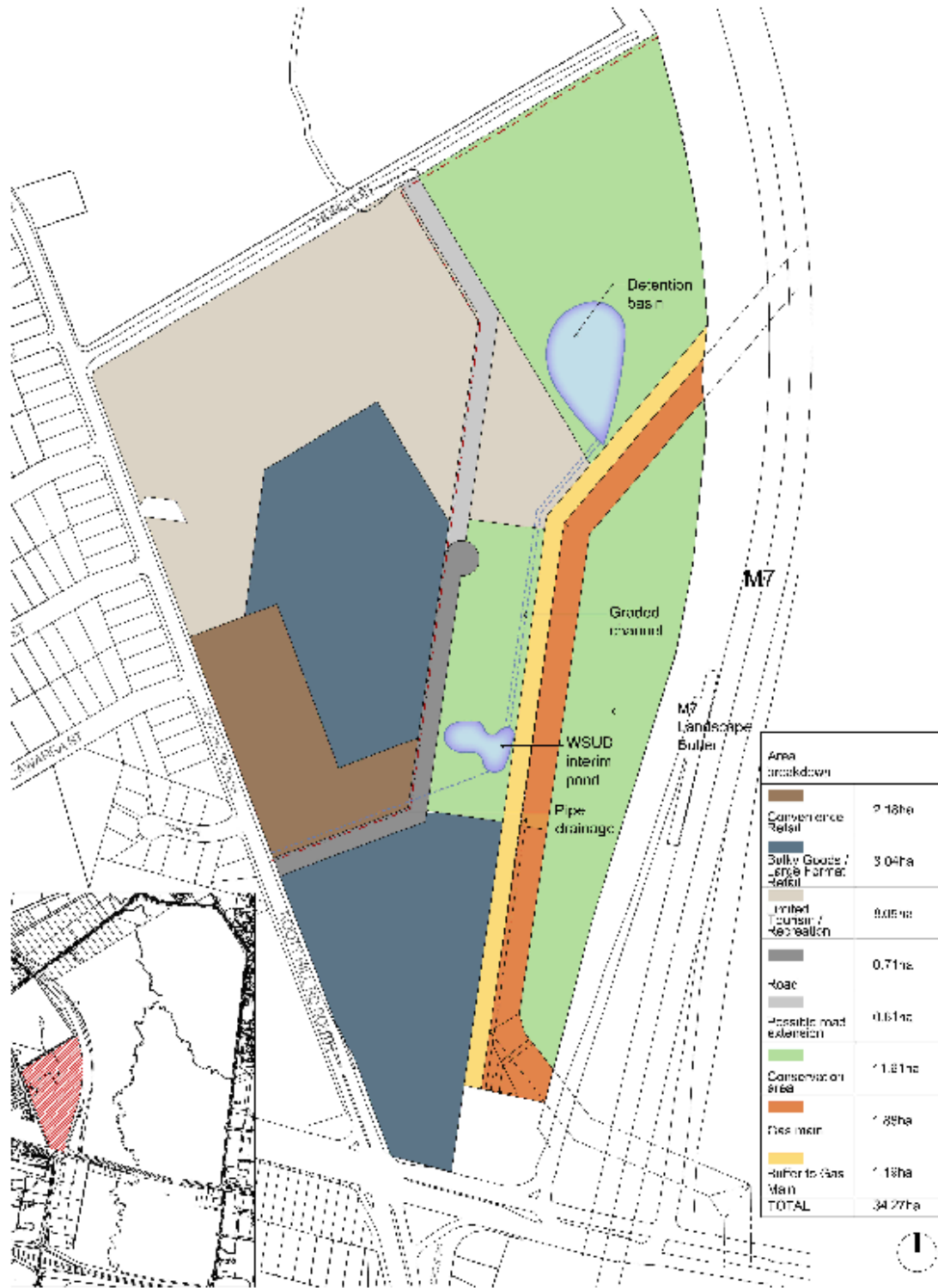


Figure 2: Proposed development plan

Attachment 1

Standard requirements

1. The Aboriginal Cultural Heritage Assessment (ACHA) should address and document the information requirements set out in the draft “*Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation*” (Department of Environment and Conservation 2005), the ‘*Part 3A EP&A Act Guidelines for Aboriginal Cultural Heritage Assessment and Community Consultation*’ (DoP and DEC 2007), Aboriginal Cultural Heritage Consultation Requirements for Proponents (DECCW 2010a), and the Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales (DECCW 2010b). These documents are available from the DECCW and the DoP upon request.
2. The ACHA should include surveys by suitably qualified archaeological consultants and include evidence of consultation with traditional Aboriginal custodians.
3. The ACHA should identify the nature and extent of impacts on Aboriginal Cultural Heritage values across the project area and the strategies employed to avoid / minimise these impacts. If impacts are proposed as part of the final development, clear justification for such impacts should be provided.
4. The ACHA should assess the archaeological and Aboriginal significance of the site’s Aboriginal Cultural Heritage values.
5. Describe the actions that will be taken to avoid or mitigate impacts of the project on Aboriginal Cultural Heritage values. This should include an assessment of the effectiveness and reliability of the measures and any residual impacts after these measures are implemented.
6. The ACHA needs to clearly demonstrate that effective community consultation with Aboriginal communities has been undertaken in assessing impacts, developing options and making final recommendations. DECC supports broad-based Aboriginal community consultation and as a guide the ‘*Interim Community Consultation Requirements for Applicants*’ (DECC 2005) provides a useful model to follow.
7. If impacts on Aboriginal cultural values are proposed as part of the final development, an assessment of the regional significance of the values to be impacted, the extent to which these values are protected elsewhere in the landscape and consideration of the proposed impacts in the context of ‘inter generational equity’ should be undertaken.

Note: If the ACHA is relying on past surveys it is critical to confirm that the surveys are consistent with the standards set out in the Guidelines at Point 1 (above). Furthermore, if any new sites or objects are located, they should be recorded on NPWS site cards and registered on DECCW’s Aboriginal Heritage Information Management System (AHIMS). AHIMS contact details: Phone: (02) 9585 6470, address: Lvl 6, 43 Bridge Street, Hurstville, NSW, 2220, e-mail: ahims@environment.nsw.gov.au.



architectus™

**Western Sydney Parklands Eastern Creek Business Hub
Request for Director General Requirements**

Appendix I

**Traffic and Transport Assessment,
Prepared by Traffix**



traffix

traffic & transport planners

Reference: 09 143

27 October 2011

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Attention: Mr Eric Brodie

Re: Western Sydney Parklands "Eastern Creek Business Hub" – Staged Development Application
Preliminary Statement of Traffic and Transport Planning Aspects

Dear Eric,

We refer to the subject Staged Development Application (DA) and advise that we have carried our preliminary investigations associated with the subject site, sufficient to establish whether a subsequent Development Application (which will also seek approval for subdivision and early works) can be supported in principle and therefore proceed to a more comprehensive Environmental Assessment. In this regard, we now advise as follows in relation to specific matters for consideration.

The Site and Context

The subject site lies on the northern side of the Great Western Highway, which forms a short southern boundary. It is also adjacent to the Westlink M7 which forms its eastern boundary. The western boundary is to Rooty Hill Road which becomes Wallgrove Road south of the Great Western Highway, while the northern boundary is to Church Street. The site has an irregular configuration and is known as the Eastern Creek Business Hub.

The site is directly opposite residential development and the Eastern Creek Public School which lie to the west of Rooty Hill Road.

Road Hierarchy and Daily Traffic Volumes

The arterial road network in the locality includes the M7 which traverses the eastern site boundary and connects Richmond Road in the north with the South Western Motorway in the south via Wallgrove Road. The M7 also forms an interchange with the Western Motorway (M4) to the south of the site. The Great Western Highway forms the southern site boundary and this provides north-facing ramps to the M7. South connections to the M7 are available via Wallgrove Road with ramps in the vicinity of Old Wallgrove Road. These roads and interchanges provide a high level of regional accessibility.

In a local context, site access opportunities are limited to Rooty Hill Road. The site has a substantial frontage to this road of about 770 metres which includes existing public road accesses via Beggs Road and Church Street.



It is highly relevant that the construction of the M7 has resulted in a significant reduction in daily traffic volumes along Rooty Hill Road adjacent to the site, from 20,352 in 2002 to 15,063 in 2005. This is a 26% reduction which has released midblock capacity along Rooty Hill Road, which is a four lane undivided road. This will assist site accessibility along this corridor.

Rooty Hill Road, which is a classified Main Road (MR537) forms a signal controlled intersection with the Great Western Highway at the south-western corner of the site. This provides unrestricted movements. To the north of the site, Rooty Hill Road forms a signal controlled intersection with Eastern Road and Francis Road. Francis Road is also a Main Road (MR 337) which connects to Woodstock Avenue and Luxford Road to the north-west, while Eastern Road is a Regional Road (RR 7170) which connects to Knox Road to the north-east.

Beggs Road and Church Street are local roads that serve the subject site. Beggs Road is sealed for a short section adjacent to Rooty Hill Road (about 30 metres). Church Street also provides access to the Rooty Hill Multi-Purpose Recreational Area and has a sealed road with grave shoulders.

In general terms, the level of local accessibility is considered to be good in terms of suitable available routes, subject to further investigation at the Environmental Assessment Phase.

Existing Traffic Conditions

Existing traffic conditions will need to be the subject of detailed analysis to establish current operating performances. These will need to be assessed for the AM and PM peak weekday peak periods, as well as a busy weekend day in the event that a high proportion of bulky goods uses are proposed.

It may also be necessary to obtain an appreciation of the possible cumulative impacts associated with the use associated with the Blacktown Olympic Venue on weekends, which is located on the northern side of Eastern Road. This will need to focus on a typical event profile, rather than infrequent peaks which may be regarded as 'non design' peaks that do not reflect demands at the 85% design level.

Access Principles

The site access principles include the use of Church Street as well as a new internal road connection further to the south. The location of the southern access is dependent upon ecological and other factors but in principle, an access to the south of Cable Place is preferred. Beggs Street is has a short section of sealed road on approach to Rooty Hill Road of about 30 metres. Due to its proximity to Church Street (a 105 metre separation) it would be ideal either to close this road or to limit access to left-in/left-out manoeuvres. However, it presently provides access to private dwellings that do not form part of the subject site and will therefore need to remain open as a public road. This would not be the case were these sites to be acquired and incorporated into the development.

It is envisaged that traffic signal control will be required at both intersections with Rooty Hill Road (at Church Street and the new southern access), with pedestrian crossings on all approaches. These two intersections will be 'T' junctions so that cycle times and phases can provide be optimal performance, while intrusion into residential areas can be managed more effectively. Local widening of Rooty Hill Road will be investigated as part of the preparation of the Environmental Assessment at both accesses, to accommodate possible right turn bays as well as left turn deceleration lanes.



Traffic Generation and Potential Impacts

Future traffic conditions will be the outcome of further detailed assessment based on the principles established in the Draft Concept Plan and as discussed herein. However, as indicated above, assistance is provided by the reduced historic traffic volumes on Rooty Hill Road as a consequence of the construction of the M7

Environmental Amenity

There are residential precincts opposite the site on the western side of Rooty Hill Road. These are accessed via Minchinbury Street, Penfold Street, Cawarra Street and Cable Place. It will be necessary to investigate measures to limit reliance on these roads for non-local traffic in order to preserve their environmental amenity. This will be assisted by the existing traffic management measures that are already in place, with calming devices and narrow road widths. The proposed site access arrangements also raise the potential to limit access to residential roads in proximity to the two proposed site accesses. Traffic conditions and safety issues in the vicinity of the Eastern Creek Public School will also need to be assessed.

Residential precincts further to the north-west will need to be the subject of assessment, possibly in response to a condition of consent that requires before and after traffic conditions to be monitored.

Internal Road Hierarchy and Parking

The internal road hierarchy is based on the access principles discussed above. This will include an internal road connecting the southern access onto Rooty Hill Road with Church Street, with all other roads providing access to individual precincts.

It is expected that the required road geometry and typical road cross sections will be established as part of the Environmental Assessment in order to inform the road design aspects of the Subdivision and Early Works components of the Staged Development Application.

It is also expected that parking will be provided having regard for both Council's and the RTA's requirements, with consideration also given to limiting parking supply where appropriate to encourage shared use of parking as well as alternate travel modes.

Pedestrians and Cyclists

The site will need to incorporate pedestrian and cyclist facilities, including consideration of both shared on-street and dedicated off-street arrangements for cyclists. It will also be necessary to establish end-user facilities for cyclists within individual developments.

The identification of pedestrian desire-lines and the provision of suitable safe crossing opportunities will be necessary in support of the road design aspects of the Subdivision and Early Works components of the Staged Development Application (DA). These will therefore need to be assessed as part of the Environmental Assessment. These facilities will need to be confirmed at the subsequent DA stage/s, when specific 'warrants' may need to be established.



Public Transport Services

The opportunities to maximise public transport and other non-car modes will need to be assessed and this is likely to be an objective of the Director General's Requirements. The extent of any change in modal splits will be dependent to a degree on the extent of bulky goods uses, which are car-dependent uses due to their nature. Accordingly, employee travel will provide the greatest potential for modal shift change.

Pedestrian and bicycle linkages to public transport services will need to be identified.

Summary

It is considered that the site is appropriate in principle for the proposed uses, with good accessibility and the prospect of an efficient distribution of trips to avoid local traffic concentrations. The assessment of future traffic conditions will establish the extent of road infrastructure improvements that will be required to support the development proposed under the Concept Plan; or the extent to which either the development mix or the intensity of use may need to be limited. Accordingly, there is no impediment in our view on traffic planning grounds, to the preparation of a full Environmental Assessment in support of a Concept Application for the subject site.

We trust that this advice will be of assistance and request that you contact us should you have any queries.

Yours faithfully,

TRAFFIX

Graham Pindar
Director